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A
DESCRIPTIVE CATALOGUE
OF THE
ANATOMICAL MUSEUM
OF
St. Bartholomew's Hospital.

PUBLISHED, BY ORDER OF THE GOVERNORS.



VOL. I.
CONTAINING THE DESCRIPTIONS OF THE SPECIMENS ILLUSTRATIVE OF
PATHOLOGICAL ANATOMY.

LONDON:
JOHN CHURCHILL, PRINCES STREET, SOHO.

1846.

L O N D O N :
GILBERT & RIVINGTON, PRINTERS,
ST. JOHN'S SQUARE.

SAINT BARTHOLOMEW'S HOSPITAL.

Extracts from the Reports of the Proceedings of General Courts and Committees of the Governors of the Hospital, respecting the Anatomical Museum and the Catalogues thereof.

At a Sub-committee held on the 26th of May, 1828:—

“Mr. Abernethy and Mr. Stanley having made a tender of the Preparations and all the other property in the Museum, to the Hospital, by the following document—

“We, the undersigned, engage to give up the Preparations, and all the other property in the Museum, to the President, Treasurer, and Almoners of St. Bartholomew's Hospital, for the time being, for the use of the Medical School ; and we also pledge ourselves carefully to preserve the same, to keep the Preparations in a state of good preservation, to supply new ones for those that decay, in a manner adequate to the instruction of students in all the facts of Anatomy usually exhibited in this manner, and to put up specimens of every interesting occurrence relative to disease and accident which may be met with in the practice of the Hospital, so long as we continue to teach Anatomy and Physiology in the school of the Hospital.

“We also engage not to make any separate collection, but to add all the Preparations and Drawings which we may procure, to those in the Museum, in order to make that collection as ample and useful as possible.

“JOHN ABERNETHY.
EDWARD STANLEY.”

“ST. BARTHOLOMEW'S HOSPITAL,
May 3, 1828.”

“We recommend that the care of the said Museum be confided hereafter to the appointed teacher or teachers of Anatomy, who, from time to time, shall communicate to the Medical Committee whatever alterations or additions may take place in the Collection; that it be considered as the duty of such teacher or teachers to keep the Preparations in a good state of preservation, to supply new ones for those that decay, and in a manner adequate to the instruction of students in all the facts of Anatomy; and also to add new specimens of any interesting circumstances relative to diseases or injuries which may occur in the practice of the Hospital.

“That the teachers are also to be required not to make any separate collection, but to add all the Preparations and Drawings to the said Museum; that the medical officers of the Hospital be requested carefully to inspect the Museum, and annually report their observations to the Medical Committee, as well as to the House Committee previous to the Midsummer General Court.

“THOMAS HELPS and THOMAS HODGKINSON, *Almoners*.

“JONATHAN HARRISON, RICHARD STRONG WELLS,
and JOHN ABERNETHY.”

Which recommendation was confirmed at the General Court of Governors, held July 23rd, 1828.

At a General Court held on the 22nd of July, 1829,

Mr. Stanley, on behalf of John Abernethy, Esq. and himself, attended and presented to this Court a Catalogue of the Preparations, &c. contained in the Museum of this Hospital, when it was resolved,

“That five Hundred copies of the Catalogue be printed, under the direction of Mr. Stanley.”

At a General Court held on the 27th of July, 1831,

Mr. Stanley attended and presented to this Court a printed Catalogue of the Preparations, &c. contained in the Museum of this Hospital, which was referred to the House Committee.

At a House Committee held on the 8th of July, 1845,

In the Report of the Medical Officers respecting the Anatomical Museum :—

“ The Medical Officers desire to draw the attention of the Committee to the present state of the Catalogues of the Anatomical Museum,”

“ And beg to submit to the Committee the propriety of causing a new Catalogue to be printed, in which the descriptions of all the specimens added to the Museum, since the printing of the Catalogue in 1831, should be included, and such alterations as are necessary in that Catalogue, should be made.”

Whereupon it was resolved :—

“ That a new Catalogue of the Museum be printed, agreeably to the suggestion of the Medical Officers, under the direction of the Treasurer and Almoners.”

Which Resolution was confirmed at the next following General Court of Governors.

At a Committee of the Treasurer and Almoners held on the 17th of September, 1846,

“ Mr. Paget presented a copy of the new Catalogue of the Museum, printed under their direction : whereupon it was resolved that the Catalogue be forthwith published.”

PREFACE

TO THE

CATALOGUE OF 1831.

IN the following description, the Natural and Morbid Preparations are arranged in the order of their situation in the Museum; an arrangement originally adopted by Mr. Abernethy, in conformity with the plan of his Anatomical and Physiological Lectures.

The description of each specimen of Morbid Structure will be found to exhibit only the circumstances which are actually visible in it, except in the instances where the description refers to the recent state of the specimen, when its characters of colour and texture were different from those it may now possess.

Whenever it could be safely inferred, from the appearances of the diseased parts, that certain processes were taking place in them at the time of death, these processes are stated. With the description of the specimens of injured and diseased bone, for example, there is an explanation of the processes by which dead bone is exfoliated, and new bone formed in its place.

In the formation of the Museum, only those Morbid specimens have been preserved which might be expected to retain their original characters in a sufficient degree to render them useful as objects of future reference. Without this explanation, the experienced pathologist would expect to find in the Collection more numerous specimens of some organs in the human body which are subject to frequent alterations in their structure.

It is due to the liberality of Dr. Conquest here to record the gift of his private Collection of Preparations, which have so greatly enriched those departments of the Museum to which they belong.

EDWARD STANLEY.

PREFACE

TO THE

PRESENT CATALOGUE.

SINCE the former Catalogue was printed, in 1831, 1035 Preparations have been added to the Pathological division of the Museum.

In the formation of the present Catalogue, all the descriptions, whether printed in the former one, or added to it from year to year in manuscript, have been revised and reconsidered; many of them have been extended; some have been corrected.

In all the instances in which it was possible, brief histories of the cases have been added to the descriptions of the specimens, together with references to more detailed accounts of them recorded in the Case-books belonging to the Museum.

The general rules of description, and the arrangement of the specimens, adopted by Mr. Abernethy and Mr. Stanley, have been but little deviated from. The arrangement appears to be the most convenient for a Museum to which every year

brings numerous additions, such as it would be difficult to insert in appropriate places, in a more minute classification. But the advantages of an arrangement founded on Principles of Pathology are sought to be attained by adding tables of reference to the descriptions of each series. By the help of these tables, it will be easy both to find any specimen in the Museum, and to study the Preparations in each series in the order in which they may best serve for illustrations of the diseases of the part to which that series is devoted.

The following general Table of References is inserted, in order that certain specimens, dispersed among the numerous divisions of the Museum, may be examined in the same order as if they had been arranged in a separate series, as illustrations of General Pathology—an arrangement which could not have been adopted, without detracting from the interest which those specimens contribute to the several series of illustrations of Special Pathology, in which they are now placed.

JAMES PAGET.

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Femur, 22, 25, 26, 27, 38, 39, 46, 83, 84, 95, 96, 97, 98, 108, 116, 119, 141, 152, 170, 171, 178, 183, 186, 212, 222, 230, 231.

Tibia, 24, 32, 37, 38, 41, 117, 139, 140, 159, 160, 245.

Fibula, 60, 61.

bones of the Foot, 106, 107, 157, 182, 214, 226, and in Series XXXV. 12.

1. PART of a Tibia, with an Abscess in its medullary tissue. The situation of the abscess is pointed out by the deficiency of medulla. The periosteum is not so strongly united to the bone as in the natural state; it has been partially reflected, to show its vascularity and softened texture opposite to, and for some way above and below, the situation of the abscess. There is a narrow ulcerated aperture in the integuments over the tibia leading to slight superficial ulceration of its outer wall.

2. Section of a Tibia, exhibiting a part of the process of Exfoliation after superficial Necrosis. The dead and exfoliating piece of bone is separated from the living bone in the upper half of its extent, and the space which has been here formed by the absorption of the surface of the living bone is occupied by soft vascular matter, like granulations. Beneath the lower part of the dead piece of bone there is an ulcerated groove, but no granulation. The granulations arising from the parts around the dead bone are large and spongy; and they overlap the margins of the dead bone.

3. Part of a Tibia affected by Necrosis. A large portion of the middle of the shaft of the tibia, including parts of its outer surface, and a much greater extent of its inner layers and cancellous tissue, has perished. A nearly complete wall of new bone, from half an inch to an inch thick, has been formed around the sequestrum, and has soft vascular matter lining its inner surface; its external surface is irregular, and it is of very dense spongy texture. The new wall is incomplete only at those situations which are opposite to the parts at which the outer layers of the walls of the tibia have perished.
4. Sections of a Tibia, in which a portion of the cancellous tissue of the head died and was separated: it lay loose within a large cavity in the head of the bone, which is lined by soft vascular tissue, and the opposite walls of which are shown in the two sections. The periosteum, thickened and vascular, has been partially reflected, to show the rough external surface formed by the accumulation of new bone on the outer surface of the head of the tibia.
5. Parts of a Femur. A portion of the whole thickness of the shaft of the femur, five inches long, died and was separated. The dead bone is contained in a cavity, which is formed in part by new bone, and in part by the surrounding soft tissues. The formation of new bone has taken place chiefly at the remaining upper portion of the shaft, but has not extended the whole length of the femur; a considerable space remains at the lower part of the thigh, where this new bone is connected with the condyles only by soft matter. The internal surface of the new bone exhibited great vascularity; the external surface is rough and irregular, and covered, not by well-formed periosteum, but by tough condensed cellular tissue, a portion of which has been turned back at the upper part. The surface of the lower end of the femur, from which the dead bone separated, is covered with granulations. The cartilage has been almost completely removed from the lower end of the femur, but the bone thus exposed is not ulcerated.

The patient was a lad 16 years old, in whom the disease had existed a year and a half when the thigh was amputated through the trochanter major. A few days

before the operation, the limb, by the complete separation of the sequestrum and the succeeding approximation of the ends of the femur, became one-third shorter than it had been. The rest of the patient's history is in the case of James Macdonnell, in a paper by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, vol. vi. p. 174. London, 1815. The patient lived thirty years after the operation; his pelvis is preserved in Sub-series D, and his humerus in Sub-series A, No. 155. Case Book, p. 70, No. 111.

6. Section of a Tibia. A portion of its anterior wall has perished, and is surrounded by new bone, from which it may be distinguished by its smoothness and peculiar whiteness. Between the new bone and the deeper portions of the dead bone there is a large quantity of soft vascular matter.

7. Tibia of a Dog, exhibiting a portion of its wall dead and in the process of exfoliation. The dead bone is distinguishable from the living by its whiter colour; its separation is almost complete. Between the dead and the living bone a space intervenes, which is filled by soft and vascular substance. New bony matter is heaped upon the living bone around the dead bone, as well as in a thick layer on that side of the shaft which is opposite the seat of the necrosis. The periosteum has been in part detached from the tibia, to show that the new bone is entirely beneath this membrane, having been formed between it and the surface of the original wall of the bone, with which, however, it has completely coalesced.

The changes just described succeeded to the cauterization of the external surface of the bone.

8. Tibia of a Dog, from which a portion of the wall, nearly similar to that which is shown in process of separation in the preceding specimen, has entirely exfoliated. The surface from which the dead bone has been separated is very vascular; and new bone is deposited in considerable quantity on the surface of the shaft around and opposite to it.

This preparation was made in the same manner as No. 7.

9. Section of the Tibia of a Dog, in which a large portion of the cancellous tissue and of the wall of the shaft perished. The dead bone lay in a cavity with very vascular walls, and new bone was in process of formation around it. The periosteum

which belonged to the old bone covers this new bone; but many fistulous holes extend through it into the cavity which contained the old bone.

The walls of the bone were perforated, and the medulla destroyed. The bone was laid bare for that purpose at the part where now the largest aperture into the cavity exists.

10. Section of the Tibia of a Dog, in which the shaft of the bone, in its whole length and in nearly its whole thickness, died. The periosteum separated from it, and is thickened. Upon the internal surface of the separated periosteum, the formation of new bone has taken place in small irregular deposits; and it will be observed that these are all opposite to those parts on which the surface of the dead shaft is rough, making it probable that the new bone is formed on portions of the surface of the old shaft, which separated with the periosteum and served as a kind of nuclei for the growth of new bone. The old bone, at its extremities, still retains connexion with the periosteum; hence it has received some of the fluid injected into the blood vessels.

The death of the bone was produced by the destruction of the medulla, as in No. 9.

11. Sections of the Tibia of a Dog, in which, as in the preceding, nearly the whole shaft of the bone has died. The dead bone is in process of separation, and new bone is formed around it in much larger quantity than in the preceding specimen. The periosteum which belonged to the old bone covers the new bone.

The death of the bone was produced by the destruction of the medulla, as in No. 9.

12. Section of the Tibia of a Dog, exhibiting the process of reparation after a small portion of its anterior wall had been removed. The space left by the lost bone is partially filled by new matter, like granulations growing from the medulla, and new bone is formed on the surface of the shaft around it.

13. Section of the Tibia of a Dog, in which necrosis has been produced in the outer layers of a small portion of its wall. The dead bone is distinguishable by its yellow colour. The living bone around it is increased in vascularity, and in one

situation the separation of the dead bone has been commenced by the formation of a groove between it and the living bone.

The death of the bone was produced by the perforation of its walls.

14. Section of the Tibia of a Dog, in which Necrosis was produced in a portion of the middle of its shaft. The dead bone, not yet separated from the living, is in part enclosed by new bone which has been formed around it.

The necrosis was produced by the destruction of the medulla.

15. Section of the Radius and Ulna of a Dog exhibiting Necrosis of a portion of the shaft of the former. The dead bone is completely separated, and new bone is abundantly formed around it. The cavity in which the dead bone is contained, is lined by a very thick and vascular membrane.

The necrosis was produced by the destruction of the medulla.

16. Sections of the Tibia of a Dog, exhibiting Necrosis of a small portion of the posterior wall, and deposit of new bone around the exfoliating portion.

17. Fore Leg of a Dog, in which Necrosis of nearly the whole shaft of the Radius has been produced by destruction of the medulla. The dead shaft has been separated from the articular ends, and new bone is in progress of formation around its extremities.

The eleven preceding preparations were obtained by a series of experiments performed by Mr. Stanley.

18. Portion of the Lower Jaw of a Child, which separated by exfoliation. It contains two molar teeth of the temporary set, and the rudiments of three of the permanent set.

19. Sections of a Tibia, of which nearly the whole length and thickness of the walls of the shaft perished, and were in process of separation from the cancellous and medullary texture, which has preserved its vitality and a nearly healthy condition. The groove formed between the dead and the living bone is filled with soft and very vascular granulations. On the internal surface of the periosteum, spongy and vascular new bone is formed in a nearly uniform layer, to supply the place of that

which has perished. The inner surface of this new bone is covered by vascular granulations.

The walls of the bone perished after inflammation of the periosteum produced by the application of nitric acid to a sloughing ulcer in the front of the leg.

20. Portion of a Tibia from a compound fracture, exhibiting the changes in the periosteum and bone preparatory to the exfoliation of the fractured extremity. The periosteum is thickened and appeared very vascular, and granulations have grown from its torn margin; a portion of it is detached and turned back, to show parts of the subjacent bone in a higher state of vascularity than is natural. Part of the extremity of the bone has acquired the peculiar white colour of dead bone.
21. Portion of a Tibia from a compound fracture, exhibiting a somewhat later stage in the process of exfoliation of the broken extremity of the bone. The dead bone is distinguishable from the living by its peculiar whiteness; and its separation has been begun by the formation of a superficial groove in the adjacent margins of the living bone. Granulations have arisen from the exposed medulla.
22. Section of a Femur, and of part of a large Fibrous Tumour which closely surrounds it. The tumour exhibits various textures. The great part of it consists of a pale, whitish, firm substance, traversed by fibres and mixed with spicula of bone; but in some parts its texture is much softer, and it has numerous small thin walled cells or cysts imbedded in it. The texture of the bone itself is natural, except that its external surface is rough and deprived of periosteum, as if that membrane were involved in the tumour.
 Cast of the Limb from which this tumour was taken,—No. 1. The tumour had grown rapidly but without much pain: and the patient recovered after the amputation of the limb.
23. The front of the Lower Jaw of a Child, which was removed by operation, on account of a tumour arising in the cancellous texture of the bone, and thence protruding into the mouth. In the progress of the operation, the front of the jaw separated into an upper and a lower portion. With the upper portion

there is a part of the tumour, which was lodged in a cavity of the bone formed by the absorption of its cancellous texture and by the separation of its anterior and posterior walls. The tumour consisted throughout of a red and fleshy mass, resembling a piece of lacerated spleen.

24. Sections of a Tibia, exhibiting a deposit of dense and very hard osseous substance, both upon the outer surface and within the medullary tissue of the upper two thirds of its shaft. The original walls may be recognized on the surface of each section, but they have coalesced with the new bone. A circumscribed space upon the upper part of the shaft is covered by irregular plates of bone set vertically upon it. It is probable that on this space there was a softer portion of an Osteoid Tumour, which has been removed by maceration. See Nos. 60 and 108.
25. Section of a large Tumour growing from the lower part of the Femur, and composed of nodules of cartilage intermixed with osseous matter. Part of the morbid structure extends through the wall of the femur with which it is connected, and through the interior almost to the opposite side.
26. A Femur of which the shaft has been in great part destroyed by ulceration, or by the pressure of a tumour. Around the ulcerated part, the bone is rough and porous. Masses of bone, composed of fine osseous fibres, originally connected with the femur, have separated in maceration. Soft matter was mixed with these, and formed a large tumour around the femur, the remaining part of which is preserved in the next preparation.
27. Section, including the outer surface, of the Tumour last referred to. It consists for the most part of dense fibrous tissue, in which are mingled some fine bony fibres. At its centre its substance was broken up and formed a large irregular cavity.

The Cast of the limb from which the two preceding specimens were taken,—
No. 2.
28. A Sacrum, in the interior of which is a large cavity, which contained pus. The walls of the bone have been expanded around

the pus, and large portions of them have been removed by ulceration. The cavity of the abscess opened widely into the spinal canal.

The patient was between fifty and sixty years old, and died of organic disease in the stomach. There was no symptom which led to a suspicion of disease of the sacrum.

29. Section of a Tibia, with the soft parts covering it, exhibiting the effects of Malignant Ulceration. The section was made longitudinally through the middle of the tibia; the other half of the tibia and the fibula are in the next preparation. By viewing the two preparations together, it will be seen that the ulcerative process has extended completely through the body of the tibia, in a great part of its length, and has reached the fibula, as is evinced by the peculiar excavated appearance of its surface. No attempt has been made to restore the lost bone; there is merely a slight deposit of bony matter upon the surface of the fibula, opposite to that which is in progress of ulceration. The interosseous ligament is in part converted into bone. The integuments around the hollow which has been left by the ulceration are much changed in structure; they are swollen, and the margins of the hollow are formed by very vascular, coarse, and hard, warty granulations.

30. Macerated portions of the Tibia and Fibula, referred to in the preceding description.

They were taken from a man fifty-three years old. Thirty years before the amputation of the limb, a heavy piece of timber fell on his leg: he recovered from the injury, and was well for twenty years, when he had a second blow on the same part, which was followed by ulceration of the integuments, and discharge of small pieces of bone. The ulceration extended in both width and depth, till the limb was removed. The principal arteries of the limb were ossified. Case Book, vol. i. p. 2, No. 6.

31. The Lower Extremity of a Femur, exhibiting the effects of Ulceration, with irregular deposits of bone around and over the ulcerated surface. These changes were probably consequent on abscess within the bone. The walls of the shaft are thickened and spongy, and the remaining cancellous tissue is consolidated, so that their respective textures can hardly be distinguished.

32. A large Cyst connected with the upper part of the Tibia. The disease seems to have commenced in the head of the tibia. The greater part of the wall of the bone is absorbed, so that the parietes of the cyst are formed above by the cartilage which covered the head of the bone, and in nearly all other directions by condensed fibro-cellular tissue, or the distended periosteum. A large portion of the cyst has been removed, to give a clear view of its interior, which is uneven, in parts fasciculated and coarsely retiform, in other parts shreddy. It probably contained blood and had its origin (like the similar specimen, No. 220) in a medullary tumour growing within the head of the bone.
33. Portion of Integuments removed from a diseased bone, exhibiting a peculiar change of structure in the skin, with thickening and consolidation of the subjacent parts.
34. A Section (cut with a knife) of the Femur of a Ricketty Child, curved in consequence of the want of its natural hardness. The shaft, instead of the natural division into solid walls and medullary cavity, consists throughout of cartilaginous and gelatinous substances intermixed and disposed in cells. It is observable, that a greater quantity of the cartilaginous substance exists in the middle of the shaft and towards the interior curve than at any other part. The articular ends of the bone are in a natural state.
35. Sections of the Femur and Tibia of a Ricketty Child. The bones, which had become curved through a want of their natural hardness, have recovered their osseous texture and their inflexibility, but the curvature remains. In the femur, the walls of the bone in the middle and along the interior curve of the shaft have acquired a greater thickness than elsewhere. The tibia is solid in the situation of the chief curvature; and in the same situation it is flattened from side to side.
- The two preceding specimens are described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. vii. p. 404, London, 1816.
36. Fragments of the upper part of a Skull increased to from half an

inch to three quarters of an inch in thickness, and consisting throughout of a very finely spongy or porous substance, which is dry, hard, and heavy, but friable and crumbling under the fingers, like hardened mortar. Into this substance both all the diploe and the tables of the skull are changed: in the inner table scarcely any trace, in the outer no trace, of compact substance remains. The grooves and apertures for blood-vessels in the inner table are very strongly marked.

These changes are such as are sometimes found in connexion with rickets or with mollities ossium. Among the casts, No. 108 represents a whole skull thus changed.

37. Sections of the lower end of the Tibia and Fibula of a Child. The walls of the bones are thin and soft, and the cells of the ossified portion of its epiphysis are filled by tuberculous matter.
38. Sections of the articular ends of the Femur and Tibia of a young subject, exhibiting the same changes as No. 37. In these, the cells of the cancellous tissue of the adjacent parts of the shafts are also filled by tuberculous matter.
39. Section of the Head, Neck, and upper part of the Shaft of the Femur of a young subject. The cells are filled throughout by tuberculous matter. The articular cartilage in this, as in the preceding similar specimens, is sound.
40. The Bones of two Wrists, together with the lower ends of the Radii and Ulnæ and the Metacarpal Bones, exhibiting the effects of Scrofulous Ulceration. On the left side the carpal bones are nearly destroyed, and there are large deep cavities, bounded by soft, greasy, crumbling bone, in the adjacent parts of the bones of the fore-arm and metacarpus: on the right side the ulceration is extensive, but superficial.
41. Section of a Tibia, and of a large Tumour which has formed around its upper third. One half of the tumour, the vessels of which have freely received the injection, is of a soft, fleshy, vascular texture. The other half, into which the injection has not so freely penetrated, consists of a mixture of cartilaginous

and osseous matter, the cartilage being arranged in nodules, and exactly resembling that of the foetal skeleton. The morbid growth is very closely connected with the periosteum in the whole circumference of the tibia, and at the upper part the osseous portion of the tumour is consolidated with the bone. The internal part of the tibia is sound.

Presented by William Brewer, Esq.

42. Section of a Leg, exhibiting a growth of soft, vascular, warty fungus from its front part. The base of the growth is consolidated with the periosteum, which, for some distance above and below, has become soft and spongy and has its connexion with the bone loosened. The bone itself is healthy, except that there has been an irregular ulceration of its external surface.

42A. Portions of the Tibia and Fibula, from the Leg last described, more plainly showing the ulceration of their anterior surfaces.

From a woman thirty-five years old. She received a blow on the shin when ten years old, which was followed by abscess and discharge of small pieces of bone. The parts healed and remained well for many years; but again abscess formed, and again healed; and after this had been several times repeated, the growth here shown sprouted out, and the patient's health failing, the limb was removed. Case Book, vol. i. p. 1. No. 1.

43. Bones of a Knee-Joint, exhibiting a peculiar alteration of texture. The diseased bone is not softened; it has a yellow colour, apparently from a peculiar firm deposit in its cancellous tissue. In some situations ulceration has taken place on the exterior of the diseased bone. The epiphyses are separated from the shafts. The articular cartilage is in some parts absorbed.

44. The other portion of the Femur last described.

45. An Os Innominatum, exhibiting a peculiar alteration of structure. The natural texture of the bone is converted throughout into a peculiar substance, which in the interior has a granulated, and on the exterior a fibrous, appearance, like the close-set short bristles of a tooth-brush. In the upper part of the specimen, the periosteum is separated, to display the peculiar fibrous substance which is between it and the surface of the ilium.

From an aged person, whose liver contained many medullary tumours. Case Book, Vol. I., p. 124, No. 147.

46. A Section of the lower part of a Femur, and of a Brain-like Medullary Tumour, which has grown within the condyles and has extended them in a large thin-walled osseous and fibrous cyst. The tumour projects chiefly backwards and laterally; a part of it is covered by the articular cartilage of the femur, which is extended over it, and in the middle, between the condyles, is perforated by the morbid growth penetrating into the knee-joint in front of the crucial ligaments.
47. Sections of the Head, Neck, and Shaft of a Femur, exhibiting suppuration in the cancellous texture. The substance of the bone has undergone no further alteration than the secretion of pus into it, and an increase of its vascularity.
48. A Tibia, the external surface of which is mottled by irregular effusions of blood into its substance, like spots and blotches of Purpura.
- The three preceding specimens were taken from the same individual. The thigh was amputated, and the suppuration in the medullary texture of the upper part of the femur was consequent on the operation.
49. Sections of the upper half of a Humerus, and of a Medullary Tumour which occupies the place of the shaft of the bone. In one of the sections, a small portion of the diseased structure, distinct from the general mass, has protruded through the walls of the bone. In the other section, the morbid structure is covered by the articular cartilage which belonged to the head of the bone.
- The tumour in this instance had a constant and regular pulsation, the cause of which was not discerned in the examination of the limb. The case is related by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. xxviii., p. 304. London, 1845.
50. A Section of a Tibia, exhibiting deposits of Lymph in the medullary tissue. Upon the external surface of the bone, in some situations, there is ulceration; in others, there are irregular deposits of osseous matter; and some small portions of its walls have suffered necrosis.
51. A Section of a Tibia, in which several irregular thin pieces of the outer wall, and two small portions of the cancellous tissue of the upper part of the shaft, have perished. The surface of the

wall around the dead portions of bone is extensively ulcerated, and around this ulcerated part new bone has been abundantly formed. In the medullary tissue lymph has been formed, and in one situation it is nearly consolidated by bone.

52. Section of a Femur from the same limb as the preceding specimen. The medullary tissue is similarly diseased. An irregular deposit of new bone has taken place upon its external surface. In some situations this deposit appeared to be connected only with the periosteum, and could be separated with it from the bone; in others, it appeared to arise from the bone itself.

From a boy fourteen years old, who without any evident cause was attacked with severe pain in the leg and thigh; the whole limb became œdematous, extensive suppuration ensued, and he died hectic. Case Book, vol. i. p. 2, No. 5.

53. Section of a Tibia, exhibiting great increase of thickness in its walls, with narrowing of the medullary tube, and consolidation of the medullary texture by thickening of the cancelli. The periosteum is detached, showing its thickened state upon the diseased part of the bone. The other section is in the next Sub-series, A, 19.

54. A Portion of the Skull-Cap of a Child, which is very much thickened, and so soft in its texture as to be easily divisible by a knife. It has throughout an appearance of great vascularity; and the soft parts covering it had the aspect of a nævus. This state existed from the birth of the child, and extended over the left side of the head and face and the left arm and shoulder.

Presented by William Kingdon, Esq. Case Book, vol. i. p. 15, No. 34.

55. A Section of four Dorsal and Lumbar Vertebrae, the bodies of which have been deeply hollowed out by absorption consequent on the pressure of an aneurism of the aorta. The surface of bone formed part of the aneurismal sac, and layers of fibrine still adhere to it. It will be observed, that the fibro-cartilages and contiguous edges of the bones are entire.

56. Sections of the Bones of an Elbow-Joint. Their articular ends are enlarged and ulcerated. The enlargement of the bones, which is greatest on the ulna, does not depend upon an addition

of new matter to their exterior, but upon a separation of the layers of their walls. Their whole texture is very light and brittle.

From a boy ten years old, in whom the disease had existed three years. He recovered after amputation of the limb. Case Book, vol. i. p. 3, No. 7.

57. A Tibia, of which a part of the shaft has suffered Necrosis. New bone has been abundantly formed on all the rest of the shaft; but, especially in the proximity of the sequestrum, it has a peculiar dry, grey, light, and brittle texture.
58. A Child's Tibia, in which several pieces of the shaft have perished. Some of them are exposed, some surrounded by new bone. There are many round apertures in the new bone, leading to the cavity in which the dead bone is contained.
59. A Tibia, in which there is a circumscribed oval ulcer which has destroyed the anterior half of its walls, laying open the medullary cavity. There is scarcely any appearance of reparation; the edges of the ulcer are sharp and uneven, and the adjacent bone is light, but not otherwise unhealthy.
60. A Section of the upper end of a Fibula, and of a Tumour which is connected with it. The tumour consists of a mixture of bone and a softer fibrous-looking substance, and it appears to have arisen from the periosteum.
61. Sections of a Fibula, upon the external surface of which are several Osteoid Tumours,—masses of compact white osseous substance, the outer surfaces of which have a fasciculated and finely fibrous aspect, like the surface of pumice-stone. Around these, the walls of the bone are in parts superficially ulcerated, and in parts thinly covered by new bone. The medullary cavity is partially obliterated by a similar substance.
62. Sections of the Bones of a Face, exhibiting an Osseous Growth filling up the maxillary sinuses. By the sections through the sinuses a small cavity appears remaining in each, and indicates, as the disease of the adjacent bones also does, that their obliteration is the consequence, not of the growth of tumours into them,

but of the thickening of their walls. The new bone by which they are increased in thickness is hard, nearly solid, and heavy ; it is almost all formed on their inner surfaces ; only a few small similar growths are elevated on their outer surfaces, and project on the face and into one of the orbits. The septum nasi and spongy bones are similarly thickened, enlarged, and very dense in their texture.

63. A Sternum, in which there is Necrosis of the central part and whole thickness of the bone. The surfaces of the dead bone are ulcerated : those of the surrounding part of the sternum are covered by new bone.
64. A Tibia, exhibiting Necrosis of a portion of its anterior wall. The dead bone, distinguishable by its black colour, was in process of separation from the living bone, a deep groove being formed between them. Its surface was in part removed by ulceration previous to its death. The walls of the bone, around the exfoliating portion, are thickened and of a porous texture.
65. A Tibia from a young subject, in which there has been Necrosis of nearly the whole Shaft. There are several distinct formations of new bone around the sequestrum, and these are placed opposite to those parts on which its surface is rough in consequence of the removal of its outer layers. The lower articular surface is destroyed by ulceration.
Presented by A. Sicard, Esq.
66. Bones of Fingers which separated by exfoliation.
67. Portions of a Tibia which separated by exfoliation.
68. Portion of a Tibia which separated by exfoliation.
69. A Tibia, of which a large portion of the shaft suffered Necrosis and is nearly separated. There is abundant formation of new bone around the old and dead bone.
70. A section of the lower end of the Femur of a Child, in which there is a circumscribed abscess, the result, perhaps, of tuber-

culous disease. It is situated in the cancellous texture, immediately above the epiphysis, through which also a channel appears to have led from it into the joint. The internal surface of the cavity is very smooth, and lined throughout by a membrane, a part of which is still seen.

71. Sections of an Occipital Bone, to the lower part of which an Osseous Tumour, nearly an inch in diameter, is attached by a narrow base. The outer part of this tumour is smooth and very dense: within, it is in part cancellous and in part nearly as dense as ivory; its textures have coalesced with those of the outer table and diploe of the skull.
72. A portion of the Lower Jaw of a Child, containing two Teeth, which separated by exfoliation.
73. Portion of a Radius, in which Necrosis, following a peculiar change of structure, has taken place in a piece of its lower end and articular surface. A groove between the dead and the living part of the bone indicates that a separation of the former was taking place. There is abundant deposit of new bone on the sound bone immediately around the diseased part.
74. Sections of a Tibia and Fibula. Both bones are greatly thickened in every part of their walls. The interosseous ligament is ossified. A portion of the tibia near its lower end has been destroyed by malignant ulceration which has penetrated through almost the entire thickness of the shaft. The ulcerated surface of the bone is covered by a thick and tough membrane. The cancellous tissue immediately above the ulcerated part is consolidated by osseous deposit.
75. Section of a Tibia. The walls are generally thickened, and the cancellous tissue is consolidated by osseous deposit, except in one part near the upper end of the bone. The periosteum is every where altered in its texture, but especially so at the lower part of the bone, where a thick fleshy growth has taken place from it.

The disease had existed twenty-five years, having commenced in a severe lacer-

ration of the integuments, which never perfectly healed. Case Book, vol. i. p. 154, No. 180.

76. Section of the lower part of a Tibia ; the other half of that in No. 75. It exhibits more plainly the fleshy growth from the periosteum, which is seen to retain its close connexion with the bone.
77. Portions of a Sternum and Ribs. There is a large cavity in the sternum filled by tuberculous matter. This cavity was closed in both behind and in front by a membrane, apparently the thickened periosteum, a part of which is now reflected.
78. Portion of a Tibia, exhibiting a peculiar change of structure which extends entirely through the bone. Both its walls and its internal parts are converted into a soft and crumbling substance of a yellowish white colour, as if by the deposit of some morbid material, like tubercle, in softened bone. The morbid alteration does not extend quite to the articular end of the bone. The integuments, in the extent to which they correspond with the diseased bone, are thickened, indurated, and ulcerated. There is a fracture in the upper part of the diseased bone ; but how this was produced is uncertain.
79. A large portion of a Skull which exfoliated after trephining.
80. Portion of a Tibia after a compound fracture, illustrating the process of exfoliation. The fractured end of the bone has perished. A deep and irregular groove has been formed round the limits of the dead bone, and a considerable deposit of osseous substance has taken place upon the contiguous living bone.
81. A similar specimen.
82. Sections of the lower part of a Tibia, in the articular end of which is a cavity, probably a chronic abscess, of the form and size of a hen's egg. This cavity is lined by a soft and vascular membrane, a line in thickness, and it contained a serous fluid.

There is a small aperture in one side of the cavity, which penetrates the wall of the bone ; but, with this exception, the bone around the cavity appears healthy, and the joint is not implicated.

83. A section of the upper part of a Tibia, and of a large Medullary Tumour which has formed within it. The tumour consists partly of a soft, brown, fibrous-looking substance, and partly of coagulated blood ; and there are some small cysts in it. A thin crust of the expanded walls of the bone surrounds the tumour. Upon the upper part of the tumour, in the situation of the articular surface of the tibia, there is a deep excavation which lodged one of the condyles of the femur. The diseased structure appears to have originated in the cancellous tissue of the head of the tibia, and is exactly circumscribed ; the shaft below it is healthy.
84. A section of the lower part of a Femur, the cancellous tissue of which is filled by a pale brownish, flocculent, and shreddy, medullary substance. The walls of the bone and the cartilage are sound, except at the posterior part of one of the condyles, where they are absorbed ; and the morbid growth protruding from within the bone is connected with several similar medullary tumours formed around the bone.
85. Section of a Molar Tooth, and of a small, nodulated, hard, ivory-like, bony Tumour, which has grown from the base of the crown and from one of the fangs.
86. Portions of a Humerus with which a Tumour is connected, which apparently originated in the bone. The greater part of the body of the humerus has disappeared. The tumour connecting the remaining portions of the bone consists of soft pale substance of gelatinous aspect, in the centre of which is a large cavity which contained a thick serous fluid. The brachial artery and nerves are attached to the exterior of the tumour, but they are healthy.

The tumour had a constant and regular pulsation, which ceased on compression of the subclavian artery, but the cause of which was not discovered in the examination of the limb. The patient was an old woman.

87. Portions of a Tibia and Fibula, which suffered Necrosis after a compound fracture. The fractured ends of both bones have overlapped, and exfoliation of the ends of the tibia has commenced. There is a superficial groove between the dead and the living bone, with an irregular deposit of new bone upon the contiguous surface of the latter.
88. The lower half of a Tibia which, like the last described, suffered Necrosis after a compound fracture. The fractured ends lay at some distance from each other, and have been united by two lateral bridges of bone extended transversely between them. The necrosed end of the upper portion is almost exfoliated, and new bone is abundantly formed on the adjacent living bone.
89. Sections of a Tibia showing the reparative results of inflammation after a compound fracture. The union of the fractured ends of the bone is effected by an irregular and very abundant deposit of hard and heavy new bone; and for a considerable space above and below the place of union, the medullary tissue is consolidated. The surrounding tissues, thickened and indurated, were firmly adherent to the surface of the bone above and below the place of union. A portion of the thickened tissue has been detached and turned downwards.
90. A portion of the Fibula from the same limb as the preceding. Its fractured ends overlap each other and are united by bone formed between them.
91. Sections of the stump of a Humerus, exhibiting the results of Atrophy from long disuse after amputation. Its sawn end tapers to a small cone; the walls of the shaft are less than a line in thickness, light and dry; and nearly all the osseous part of its cancellous tissue being removed, the medullary tube appears, after maceration, like a smooth-walled cavity.
92. Section of a Femur, the shaft of which was fractured about two inches below the lesser trochanter, after atrophy and softening of its texture. The fractured portions have united firmly

and smoothly, but so that they form an acute angle. The posterior surface of the head of the Femur is absorbed where, in the altered position of the lower extremity, it rested on the margin of the acetabulum.

The other half of this bone, and the opposite femur, which was similarly fractured and united, are preserved in Sub-series C, No. 116. The patient, who was about fifty-six years old, had been bedridden for some years before the fractures occurred; they were both produced while he was being turned in bed.

Presented by William James Jones, Esq.

93. Portions of a Femur, Tibia, and Fibula, dried, with some of the surrounding parts. A peculiar change of structure, apparently similar to that shown in No. 78, has taken place in the femur. Its surface is extensively ulcerated from the condyles upwards, and it has been broken or ulcerated through the shaft just above the condyles. Irregular deposits of osseous matter have taken place in the soft parts around the diseased bone, and on the shaft at the borders of the ulceration.
94. Sections of the Femur of a young subject, in which there has been an Abscess in the cancellous texture just above the condyles. There are irregular ulcerated apertures in the walls of the bone through which the matter passed from the cancellous texture into the surrounding soft parts. For some distance beyond the seat of the abscess, deposits of new bone have taken place upon the outer surface of the femur, and the layers of the wall are separated. The texture of the whole of the bone is light, dry, fragile, and white.
95. Section of a Tumour occupying the situation of the head and upper third of the shaft of the Tibia. The external surface of the tumour is covered in by the aponeurosis which invested the knee-joint, and by remains of the walls of the bone extended and thinned around it. At the upper part of the tumour are the semilunar cartilages and the articular surface of the tibia in a sound state but enlarged. Internally the tumour consists of a mixture of soft medullary substance and bone, disposed in the form of large cells or cysts of various size and shape, some of which were filled by a clear yellow fluid, others by coagulated blood. The walls of the cells consist of mem-

brane with bony fibres dispersed through it. Between the cells are considerable spaces, filled by soft and shreddy medullary substance, which extends for a short distance into the interior of the shaft of the tibia, and then terminates with an abruptly circumscribing line.

96. The other half of the Tumour last described. All the soft substance having been removed by maceration, the irregular bony plates and fibres are displayed which contributed to form the walls of the cells or cysts in the interior of the tumour.

From a woman thirty years old. The disease, beginning after a fall on the knee, had existed two years and a half, and had gradually increased without pain. She recovered after the amputation of the limb. See Case Book, vol. i. p. 57, No. 102; an extract from a fuller account of the case by Mr. Lawrence in the *Medico-Chirurgical Transactions*, vol. xvii. p. 35. London, 1832.

97. Section of a Femur and of a Tumour surrounding the lower part of its shaft. The tumour consists of a mixture of medullary substance and a firm tissue like that of a fibrous tumour or fibro-cartilage with spicula of bone dispersed through it. At its posterior part are some thick-walled membranous cells or cysts which were filled with coagulated blood. The injection of the limb has displayed minute vessels distributed irregularly through the tumour. The walls of the femur enclosed within the tumour are diseased, softened, and thinned, to the extent of about two inches; and in this situation the shaft is broken, and the cancellous tissue is filled by a morbid structure similar to that which surrounds the bone.

98. Section of the Tumour last described.

The patient was twenty-two years old, an opera dancer, and the disease had existed about seven months. The tumour grew rapidly and with much pain. He died shortly after amputation of the limb; and no other part was found diseased. Case Book, vol. i. p. 58, No. 103.

99. Section of a Tibia exhibiting a peculiar change of structure, with extensive ulceration, and necrosis of a portion of its walls and medullary texture. A cavity between the diseased bone and the periosteum was filled by purulent fluid. Above and below the chiefly diseased part the walls of the bone are thickened and indurated.

100. A Skull from a Lunatic. The large portion of the parietal and occipital bones comprising about a third of the whole vault of the skull, as well as the small pieces which lie around it, were exfoliated in consequence of a burn. The size of the aperture left in the upper and back part of the skull was, during the twelve years in which the man survived the injury, in a very slight degree diminished by the growth of bone from its margins. The exposed part of the dura mater was covered by a dense tissue like that of an ordinary cicatrix.

The patient was twenty-three years old when, after many attempts to commit suicide, he laid his head on a fire and remained till the whole of the scalp was completely charred and a portion of the bone was calcined. The process of exfoliation of the bone occupied eighteen months: but a complete cicatrix formed. When he recovered, the patient, though still insane, did not again attempt to destroy himself. Case Book, vol. i. p. 148, No. 171.

101. The second Phalanx of a Thumb, separated after necrosis which was connected with a Whitlow (Paronychia).
102. A Lower Jaw, nearly the whole body of which suffered Necrosis after the administration of a few grains of calomel in a case of fever. The dead bone is in part separated, and a small quantity of new bone is deposited around it.
103. Portion of a Tibia, with a circumscribed smooth-walled cavity in the cancellous texture of its head, which cavity was filled by pus, and is lined by a soft vascular membrane. It nearly resembles the cavity shown in No. 70, and opens by two apertures through the walls of the tibia; but the rest of the bone appears healthy.
104. Portion of a Tarsus, exhibiting Necrosis of the Os Calcis. The whole of the internal cancellous texture of the bone has perished, and was in process of separation from the thin osseous layer constituting its walls. The necrosis appears to have succeeded to a diffuse suppuration through the os calcis.
105. An Osseous Tumour, which was removed from the humerus of a boy fourteen years old. It was situated at the insertion of the pectoralis major. Its outer surface is covered by periosteum. Internally it consists in part of a white and dense

osseous texture, and in the rest of its extent of a cancellous texture, the cells of which were filled by an oily fluid. At the bottom of the bottle are portions of the tumour which were separated in the operation.

106. The second Phalanx of a great Toe, near the end of the upper surface of which there is an osseous tumour composed of hard and finely cancellous bone.

Presented by Robert Liston, Esq.

107. The second Phalanx of a great Toe, which was removed by operation. The nail is raised and pushed aside by a tumour beneath it. A small portion of the tumour has been removed for the purpose of showing that it consists, like the last described, of hard osseous substance.

Presented by Robert Liston, Esq.

108. A Section of the lower half of a Femur, and of an Osteoid Tumour which has formed around it. The tumour consists almost entirely of a solid, uniform, and very dense osseous substance. The medullary tissue of nearly all that part of the bone which is surrounded by the tumour is filled by a similar substance, and about the condyles, the walls of the femur being absorbed, the morbid growths within and without form one mass. A part of the exterior of the tumour is composed of a soft fatty-looking substance.

109. The other Section of the Femur and Osteoid Tumour last described. By maceration, the soft matter of the tumour has been removed, leaving only the hard, dense, and white osseous substance around and within the bone. The outer surface of this portion of the tumour is nodulated, and portions of it have a fibrous texture like that of pumice-stone. In the lower part of the bottle are several of the inguinal and lumbar lymphatic glands from the same side of the body as the tumour. They are converted into an osseous substance similar to that of which the tumour is composed.

110. The Femoral Artery, together with several Bony Tumours

which occupied the situation of the lymphatic glands in the ham and groin of the patient from whom the two preceding specimens were taken. The tumours consist of a hard osseous substance, which is displayed by a section of one of them. The femoral artery is sound, but its popliteal portion is compressed and altered in its course by its connexion with the bony tumours. The ligature upon the artery, about three inches below the origin of the profunda, was placed around it in consequence of the tumour in the ham having a pulsation and other characters like those of an aneurism.

The patient was a man thirty years old. The swelling seemed to have its origin in a fall on the right knee; it began at the front, and gradually extended round the lower part, of the thigh. It pulsed like an aneurism, and when a part of it was punctured, arterial blood flowed. The femoral artery being tied, the pulsation ceased and the tumour for a time diminished; but it afterwards again enlarged, and the patient died exhausted. The femoral artery was compressed and displaced by the diseased glands. The case is recorded by Mr. Stanley, in the *Medico-Chirurgical Transactions*, vol. xxviii. p. 305, 1845.

111. Section of a Femur, and of a large spheroidal Tumour which has formed around it. In the upper part of the bone a fracture occurred several years before death. The two portions of bone overlapping have firmly united. The tumour, which nearly surrounds the middle of the shaft, is composed of a very firm substance, like fibro-cartilage. A portion of the same substance occupies the corresponding part of the medullary cavity, in which the disease has apparently commenced.
112. The other section of the Femur last described. Its walls are irregularly thickened, with expansion of their texture and deposit of new bone on their exterior; and together with irregular cavities in the medullary tube, there is thickening and induration of its osseous tissue.
113. Section of a Humerus from the same person as the last-described femur. It was fractured through the middle of its shaft some years before death. The fracture has firmly united, with a perfect apposition of the ends of the bone, and without any obliteration of its medullary cavity; but there is the same disease of the walls and the cancellous tissue as there is in the femur.

114. The other half of the preceding specimen macerated.

115. Portion of a Spine, with a Tumour which, originating in the heads of the ribs, has extended into the cavity of the chest, and, through the holes giving passage to the nerves, into the vertebral canal, where it compresses the spinal cord within the fourth and fifth dorsal vertebrae. That part of the tumour which projects into the chest is covered by a thick membrane, which apparently originated in the pleura costalis separated from the ribs; a portion of this membrane has been removed. The tumour, which is probably a softened cartilaginous one, consists of a gelatinous substance, in some parts approaching to the firmness of cartilage, and in others very much softer, and resembling boiled sago.

The patient was a man thirty years old. The compression of the spinal cord produced complete paralysis of the pelvic organs and the lower extremities.

116. Section of a Tumour and of part of a Tibia. The tumour occupies the situation of the head and the upper third of the shaft of the tibia: it apparently originated in the interior of the bone, and extended the wall around it as it grew. At the upper part, the articular surfaces of the tibia and the ligamentum patellæ may be recognized. The tumour consists in part of a white, solid, and very firm medullary substance, and in part of a more vascular and spongy substance, in which there are large cells that were filled by a gelatinous fluid.

From a man aged forty. The limb was removed by operation.

117. The Head of a Tibia with a large osseous Tumour surrounding it. The tumour apparently originated from the external surface of the tibia and beneath the periosteum, which in one situation is seen continued from the tibia upon its external surface. In the centre of the tumour is a large irregular cavity which was filled by purulent fluid, and upon one part of its surface are some smaller cavities which were filled with blood, and the sides of which are formed by a dark coloured and soft substance. A part of the interior of the head of the tibia is occupied by a similar osseous substance.

118. Section of a Tumour consisting of nodules of cartilage connected by fibro-cellular tissue, and having specks of bone dispersed through it. It was connected with an Os Innominatum. The remaining part of it, consisting principally of bone, is preserved in the next Sub-series, A. 133.
119. Portion of a bony Cyst which was removed from the external and lateral part of a lower jaw. The cyst is lined by a thick and soft membrane which has been in part separated from it. The cavity of the cyst was filled by a glairy fluid, and at the bottom of it a canine tooth of the second set was adherent to the lining membrane. Upon the exterior of the cyst are some branches of the facial nerve which were removed with it. At the bottom of the bottle is the tooth which was contained in the cyst.
- 119A. Part of a bony Cyst formed by expansion of the walls of the lower jaw of a sheep. The cyst was full of fluid, and an incisor tooth is loosely attached to its walls.
120. Section of a Tibia from a Stump, exhibiting the reparative changes which have taken place in the sawn end of the bone. The medullary cavity is closed by a thin layer of new bone, and other thin osseous deposits are formed around the end of the stump.
121. Portion of a Femur from a Stump. The medullary cavity is completely closed, and there are two pointed processes of bone which extend upwards from the posterior part of the end of the femur and probably afforded attachment to the flexor muscles.
122. Portions of a Tibia and Fibula from a Stump. At the extremity of each bone the medullary cavity is completely closed by new bone; and a bridge of new bone extends between the tibia and fibula, uniting them firmly together.
123. A Knee-Joint. A section of the head of the tibia shows a small portion of dead bone in the centre of its cancellous tex-

ture. A piece of glass is passed through a fistulous passage extending from the skin covering the front part of the head of the tibia, to the dead bone in its centre. The synovial membrane of the knee-joint is very vascular and is covered upon its internal surface by a layer of lymph, into which the injection has freely passed from the vessels of the synovial membrane.

From a young woman, in whom the amputation of the limb was performed on account of the inflammation in the knee-joint consequent on the necrosis of the head of the tibia. The necrosis had existed many years.

124. Section of a Tibia with a vascular malignant fungus growing out of its cancellous texture, the internal surface of its posterior wall, and the surrounding soft parts.
125. The other Section of the Tibia last described, together with the Fibula. The tibia exhibits the destruction of a portion of its shaft, and new bone is thinly deposited upon the surrounding surface of the tibia and fibula.
126. Section of the lower part of a Tibia and of a malignant fungous growth from the integuments, such as probably preceded the destruction of the bone in the preceding specimens.
127. Section of a Tibia, the other half of the specimen, No. 126. The periosteum has been in part separated from the bone for the purpose of showing its altered state, and that the bone is sound. The periosteum is increased in thickness and of a soft flocculent texture ; and the morbid growth, which, as the specimen No. 126 shows, apparently originated in the skin, is here traced to the periosteum. The principal part of the growth is composed of close-set groups of vascular, leaf-like, and warty prominences bounded by an elevated abrupt margin, beyond which the skin is nearly healthy.
128. Section of a Femur from a young woman, in which a fracture was produced by the action of the surrounding muscles. The walls of the bone are much thinner than natural ; but its sub-

stance apparently contained the usual proportion of earthy matter. The fracture is imperfectly united.

Presented by W. J. Wilson, Esq., Manchester.

129. Section of a Femur in which that change of structure has taken place which is usually denominated Mollities Ossium. The walls of the bone are very thin, and their substance so soft as to be readily divided by a knife. The osseous lamellæ and filaments are removed from the cancellous texture; and the medullary cavity and all the cells of the cancellous texture are filled by a fatty substance, which is now, after maceration and the action of alcohol, of the consistence of lard.

130. Section of a Humerus from the same subject as No. 129. The walls of the bone are thin, but of their natural hardness. The adipose substance filling the medullary cavity and cancellous texture is converted by maceration into a white firm substance resembling adipocire.

From a woman seventy-two years old who had been bed-ridden with paralysis of the lower extremities for nearly two years. Her hip and knee-joints were fixed in permanent flexion. At short intervals before her death her right femur and right arm were fractured when she was being turned in bed.

Presented by the teachers of the Medical School at the London Hospital. See Case Book, vol. i. p. 45, No. 86. The case is related by Mr. T. B. Curling, in the *Medico-Chirurgical Transactions*, vol. xx. p. 356. London, 1837.

131. Section of a Tibia exhibiting various changes of structure connected with suppuration in its medullary and cancellous texture. The cancellous tissue is in some situations consolidated by the growth of bone in it: in others it is partially filled by lymph and pus. The walls of the bone are throughout greatly thickened, and in some parts of them there are ulcerated passages leading to the medullary cavity.

132. Sections of a Femur exhibiting Necrosis of a portion of its walls near the trochanter major. The dead bone is separated, and there is a considerable quantity of new bone formed around it. In consequence of inflammation extending to the hip-joint, ulceration has taken place in the head and neck of the bone.

A portion of the head of the bone remains, but it has been separated in the line of the epiphysis.

133. Section of a Tibia from a Boy, in which there has been Necrosis of a large portion of the whole thickness of the wall. The largest piece of the dead bone has been removed from the cavity in which it lay and is preserved in the next following preparation. The outer surface of this piece of dead bone, as well as of that which remains in this specimen, is quite smooth, the periosteum having separated without any portions of bone attached to it. On the inner surface of the separated periosteum, a layer of new bone, half an inch thick, and forming almost a complete new wall to the tibia, has been produced. The outer surface of this new bone is covered by the old periosteum, the continuity of which with that of the articular ends is shown; and the inner surface of the new bone is lined by a soft vascular membrane, which was in close contact with the outer surface of the dead bone. A portion of skin is left, which formed part of the boundaries of an external ulcer, exposing the dead bone on the front of the leg.

Presented by Sir James M'Gregor.

- 133A. The dead and separated portion of the Tibia last described.

134. Section of a Femur, with the Femoral Artery and Vein attached to it. The bristles in the cut surface of the femur mark the boundaries of a cavity in the bone which is filled by soft substance. From this cavity it was presumed, from the history of the case, that a portion of dead bone had been extracted during the lifetime of the patient. Upon the surface of the femur there is an irregular deposit of bone thickening its wall: and to this the femoral vessels are very firmly adherent. The femoral artery is sound and of its full diameter in its whole extent. The femoral vein is also of healthy texture, but is much contracted in that part which adheres to the femur and lies within the tendinous sheath containing the vessels just before their passage into the ham: below this part there are clots in both the vein and the artery.

From a middle-aged woman, who died with dry gangrene of the leg.

135. Section of a Tumour, with the portion of the Lower Jaw from which it originated. The portion of jaw comprises the whole of its left ramus, condyle, and body, to within a short distance of the symphysis. The morbid growth apparently originated in the cancellous texture of the jaw ; a part of its outer surface being formed by the walls of the bone expanded over it. It consists of a white and firm, nearly homogeneous, substance, with specks of osseous matter dispersed through it.

The patient was a man about twenty-two years of age. He recovered quickly after the removal of these parts.

136. Sections of a Tumour, with the portion of the Lower Jaw from which it originated. The portion of jaw removed by operation comprises the whole of its ramus, except the condyle, with the whole of the same side of its body to the symphysis. The morbid growth apparently originated in the cancellous texture, and is in part covered by the expanded walls, of the jaw. It consists, like the last-described, of a dense, white, homogeneous substance.

Presented by John Allport, Esq., Lichfield.

137. Portion of the Cranium of a young person. A growth of short, vertically-placed, osseous fibres and lamellæ has taken place on a large extent of both the external and internal surface of the cranium. They probably formed the basis of an osteoid or medullary tumour. The bone is completely perforated by many minute apertures.

138. Portion of the Os Innominatum of a young person. The bone is increased in thickness by the separation of its layers and the expansion of its cells. Its texture is very light and brittle.

139. Section of the head and upper part of the shaft of a Tibia, and of an Osteoid growth around and within it. A dense osseous substance, as hard as ivory, and dull white, like chalk or pumice-stone, occupies the place of the cancellous texture, and extends some way down the medullary cavity. The tumour around the bone consists in part of a similar osseous

substance, and in part of a soft substance, spongy and cellular in some situations, and like a medullary tumour in others. A portion of the periosteum is separated, to show that the morbid growth has originated beneath the membrane from the surface of the bone itself. The smaller tumour connected with one side of the morbid mass occupied the situation of the popliteal lymphatic glands, and consists throughout of bone, partly ivory-like and partly spongy.

140. The other half of the Tibia and Tumour last described, from which the soft matter has been removed by maceration.

141. Section of the Stump of the Femur from the same patient as the specimens 139 and 140. The extremity of the bone is covered by skin. Within the medullary cavity are distinct morbid deposits, consisting partly of osseous, and partly of soft, matter.

The patient was a middle-aged woman in whom the disease made slow progress for sixteen years, and gave little or no pain till three months before the amputation of the limb. She died eight weeks after the amputation with similar osteoid growths in the inguinal glands and lungs, and with wart-like tumours scattered over the diaphragm.

142. Section of a Femur from a Stump, exhibiting an irregular osseous deposit upon its surface, immediately above its extremity which has perished.

143. The Tibia of a Dog, in which Necrosis of part of the shaft was produced by destruction of the Medulla. The dead bone was separated by natural processes, and has been removed, with the exception of a small portion which is distinguishable in the centre of the new osseous cylinder. The new bone presents a very irregular external surface, and is firmly united to the articular ends of the old bone.

The preparation was obtained by an experiment made by Mr. Stanley.

144. Portions of a Tibia and Fibula from a Stump. The fibula is united to the tibia by ossification of the interosseous ligament. An irregular deposit of new bone has taken place on the external surface of both bones for a considerable distance above their extremities.

145. Portion of an upper Jaw with two molar teeth, which separated by exfoliation.

From a boy aged six years. The necrosis was consequent on a severe blow upon the face.

146. Portion of a lower Jaw containing a bicuspid and two molar teeth, which separated by exfoliation.

From a boy aged four years. The necrosis occurred without any apparent cause. The loss of this portion of the jaw was completely repaired.

Presented by Alexander Anderson, Esq.

147. Sections of a Tumour with the side of the body of the lower Jaw in which it originated; removed by operation. Part of the mucous membrane of the mouth, unaltered in structure, is extended over the upper surface of the tumour. The disease originated in the cancellous texture of the jaw. The walls of the bone are expanded into a thin case enclosing the tumour, but, in consequence of the absorption of the bone in some situations, this case is incomplete. The morbid growth consists of granules of a peculiar fatty-looking substance, partitioned by fibro-cellular tissue, and having cells dispersed through it, which cells contained a glairy fluid. The boundaries of some of the cells are thin plates of bone, apparently the remains of the original cancellous texture of the jaw.

From a man aged twenty-five.

148. Sections of a Tumour with the portion of the lower Jaw in which it originated; removed by operation. The portion of the jaw taken away includes one side of it, from the angle to within a short distance of the symphysis. Part of the mucous membrane of the mouth, unaltered in structure, is extended over the tumour. The tumour, originating in the cancellous texture of the jaw, is surrounded by a thin shell of bone, formed by the remains of the walls of the jaw. The tumour consists of a solid and very compact fibrous substance of a greyish colour, irregularly intersected by white fibres.

From a female aged fourteen.

149. Sections of a Tumour and of the portion of the lower Jaw, in

which it originated; removed by operation. The portion of the jaw comprises its whole side, from the angle to within a short distance of the symphysis. The morbid growth consists of a grey, dense, fibrous substance, originating from the alveolar border and from the outer surface of the jaw. Part of the alveolar border of the jaw has been absorbed; and in this situation the morbid growth appears to extend into the bone. The contiguous substance of the jaw is of an ivory-like hardness, and its cancellous texture is consolidated.

From a female aged thirty.

150. Sections of a Tumour which formed in the side of the neck immediately below the seat of the operation by which the parts last described were removed. The tumour consists throughout of a firm fibrous substance. The irregularity of surface and looser texture which it presents in one situation result from the ulceration and sloughing of its substance, which commenced a short time before death. With the smaller section of the tumour is connected a part of the lower jaw: its texture is sound, but the morbid growth is closely attached to its surface.

Other portions of the same are shown in No. 251.

151. Sections of a Tumour, which occupied the situation of the superior Maxillary Bone and was removed by operation. The whole of the natural structure of the superior maxillary bone has disappeared. The mucous membrane which covered the palatine surface of the bone extends over a part of the tumour. The morbid growth consists of a moderately firm fatty-looking substance, with minute cells and spicula of bone dispersed through it.

From a man aged forty-six. The disease returned after the operation, and the patient died in consequence of hæmorrhage from ulceration of the internal carotid artery which became involved in an extension of the disease.

152. Sections of the upper part of a Femur. The medullary canal of the bone is filled by firm fibrous substance. Around this substance the walls of the bone are converted into a loose flocculent texture. In the upper part of the specimen this change has extended completely through the walls of the bone: in the lower part it appears to be commencing

upon the inside of the bone contiguous to the fibrous substance filling the medullary canal. The head and neck of the femur, and the os innominatum of the same side had undergone similar alterations in structure.

From a man aged fifty-five.

153. A Great Toe with its Metatarsal Bone removed by operation. There has been necrosis of a portion of the interior of the metatarsal bone. The sequestrum lies within a cavity which is lined by soft and vascular substance, and opens externally by fistulous apertures in the skin. The inflammation accompanying the processes consequent on the necrosis of the metatarsal bone has extended to the first joint of the toe, and has produced the complete destruction of the articular cartilages.
154. Section of a Humerus, with a Tumour which was attached to it. There is a portion of skin connected with the tumour and the surrounding muscles; and the cicatrix in the skin is the result of an operation which was performed for the removal of a tumour which occupied the situation of that here shown. The disease being reproduced, it was deemed necessary to amputate the arm at the shoulder joint. Both the arteries and veins are filled with red wax, which having been injected into the brachial artery returned freely by the veins. Part of the tumour is situated in the biceps muscle; the other part of it extends to the bone, on the outer surface of which there is an irregular cavity, in which a small portion of the tumour was imbedded. From this cavity several small canals deeply penetrate the bone; and the medulla in this part of the bone was softer and more vascular than elsewhere. On one of its surfaces the tumour has a very close connexion with the vessels and nerves of the limb. The tumour is soft and of a medullary character.

From a female aged twenty-five.

155. Portion of the Femur from a stump. A circle of bone at the extremity of the stump has separated after necrosis. A considerable deposit of new bone has taken place upon the surface of the femur, and forms a thick ring above the part from which the dead portion separated.

156. Portion of a Spine in which there are several excavations upon the front and sides of the bodies of the eleventh and twelfth dorsal and first lumbar vertebræ. These excavated surfaces formed part of the boundaries of an aneurism of the aorta. Around the excavations there are some deposits of new bone.

157. Sections of the second phalanx of a Great Toe, exhibiting the growth of an osseous exostosis from its extremity. The bony growth was immediately surrounded by a soft and fibrous substance which formed part of an external tumour projecting from beneath the nail.

From a man aged thirty.

158. The greater part of the shaft of a young person's Fibula, which was attacked by Neerosis. The death of the bone occurred without obvious cause; its separation was effected by exfoliation, and new bone was formed in its place.

159. Section of the lower part of a Tibia and of a Tumour contained within it. The tumour consists of a brain-like medullary substance, with blotches of blood effused in it, and is almost completely surrounded by a thick osseous cyst which is continuous with the wall of the tibia. It may be presumed that the morbid deposit commenced in the interior of the bone, and that, as it grew, so also the bone grew around it, with internal absorption and external deposit of new bone, and thus formed the osseous cyst. The arteries of the limb are injected; some of their branches pass through the morbid growth.

160. The other half of the Tibia and of the Tumour last described. A portion of skin is here left, in which there is ulceration with fungous growth originating in the morbid structure. The cavity immediately above the cartilage of the ankle joint was filled by soft medullary substance.

The two preceding specimens were presented by Joseph Swan, Esq. The limb was amputated by Mr. Hey, of Leeds.

161. Portions of a Tibia which were separated by exfoliation.

From a girl twelve years old.

162. Sections of the lower part of a Femur, enlarged and having a cavity in its interior. The cancelli and the wall of the bone surrounding this cavity exhibit a natural texture. Upon the outer surface of the bone, corresponding with the cavity in its interior, there is a considerable deposit of new bone, apparently the result of irritation of the periosteum.

It is not known what the cavity in the femur contained, nor under what circumstances it was formed.

163. Sections of the head and upper part of a Tibia. Portions of the bone, from long-continued inflammation, are irregularly excavated by ulceration, and the whole of its texture is porous and spongy.

The limb was amputated in consequence of destructive inflammation of the knee joint.

164. Portion of the shaft of a Humerus separated by exfoliation, after Necrosis following amputation.

The patient was a middle-aged man. The amputation was performed on account of a compound fracture.

165. The Finger of an adult, in which there is Necrosis of the first phalanx in one half of its length including the distal articular end. The extent of the dead bone is marked by bristles introduced between it and the surrounding parts. The separation of the dead bone is complete, but no new bone has been formed in its place.

166. Portions of a Humerus from a case of Necrosis. They were removed by operation from a young person. In the upper end of the larger portion, the mark of the application of the trephine may be recognized.

167. Portion of a Lower Jaw, including its angle and a great part of the ramus, which was separated by exfoliation.

From a young person in whom the necrosis had arisen without any evident cause.

Presented by J. G. Perry, Esq.

168. A Lower Jaw which was separated after Necrosis; from a Girl twenty years old. Previous to the necrosis the whole of the jaw had been covered by a formation of porous, hard, greyish, new bone; and this, which extends even over the condyles and coronoid processes, perished with the original substance of the jaw, and was exfoliated with it.

The disease commenced six years before the removal of the jaw. In the operation for removal the middle of the jaw was cut from the rest and extracted first; one lateral half was removed the next day; and the other, three weeks afterwards. The wound made in the operation, and the sinuses which had led to the diseased bone, healed quickly, and the patient recovered completely; regaining the power of mastication with those of the lower teeth which remained imbedded in the gum after the removal of the jaw.

Presented by J. G. Perry, Esq.; by whom a further account of the case is given in the *Medico-Chirurgical Transactions*, Vol. xxi. p. 290. Case Book, Vol. i. p. 117, No. 142.

169. An Os Calcis, of which a portion has been exfoliated after Necrosis. There is ankylosis between the os calcis and os cuboides.

170. Section of a Femur with the osseous part of a Tumour which occupied the place of the shaft of the bone. The tumour measured thirty-six inches in circumference. Its larger and outer part consisted of medullary substance; the smaller and deeper, of a mixture of medullary substance and bone. The head of the femur is the only portion of the bone retaining its healthy structure. The morbid osseous substance is fragile, light, spongy, and cancellous; but the form of the cancellous spaces differs materially from that of those in healthy bone.

From a girl aged eleven years.

171. Sections of the Femur last described.

Presented by Joseph Sargent, Esq.

172. Portion of a Tibia in which a large piece of the middle of the shaft has been destroyed by ulceration and necrosis extending gradually through it. The remaining bone is light, brittle, and porous, and there is a deposit of new bone on its surface above and below the diseased part.

Removed by amputation from a middle-aged man: the disease was the consequence of external injury from a rope coiled round the leg.

Presented by Edgar Barker, Esq.

173. Section of the articular ends of a Femur and Tibia, and of an Astragalus, from a boy whose limb was amputated. The bones are enlarged, chiefly by the expansion of their cells. Some of the enlarged cells are filled by healthy marrow; others by semi-fluid jelly: and some by a substance presenting all the characters of healthy cartilage. Both the knee and ankle joints are ankylosed by adhesion of the opposite surfaces of the synovial membrane, and in the ankle joint there is also a partial osseous union.

174. The remaining portions of the bones last described. The removal of the soft matter from the interior of the bones by maceration displays the enlarged cells, and unusually numerous thin osseous laminæ along the medullary tube.

On the card marked A, is the other half of the section of the shaft of the Tibia, and on that marked B, are portions of necrosed bone which were removed by the patient himself from his tibia five years before the amputation of the limb.

175. A Tibia in which there has been Necrosis of a large portion of the shaft, including a part of its lower articular end. The dead bone remains inclosed within a case of new bone.

Presented by Gurney Turner, Esq.

176. Section of the Shaft of a Femur, exhibiting a fistulous cavity in its interior, with Necrosis of a small portion of the inner layers of its wall. Two bristles are placed in a groove extending to some depth between the dead, and the contiguous living, bone. A vascular membrane, having a soft velvet-like surface, lines the fistulous cavity in the bone.

The limb was removed by amputation. Thirty-five years previous to the amputation, the femur was fractured; this was followed by abscess in the soft parts, and the formation of a fistulous passage extending into the cavity in the interior of the bone, which passage remained open during the whole period from the fracture to the removal of the limb.

Presented by James Pritchard, Esq., Leamington,

177. The other half of the bone, No. 176, macerated.

178. A cartilaginous and osseous Tumour, removed by operation

from the femur, just above the inner condyle, of a girl sixteen years old. The exterior of the tumour is covered by a thin layer of dense fibrous tissue ; beneath this is a layer of cartilaginous substance, enclosing the bone, which has a cancellous texture and contains medulla.

179. Ring of bone exfoliated from the end of a Femur after amputation.

180. Part of the shaft of the Ulna of a child four years of age, separated by exfoliation. The cause of the necrosis was unknown.

181. The greater part of the superior Maxillary Bone of a child five years of age, separated by exfoliation. The cause of the necrosis was unknown.

182. A Cartilaginous and Osseous Tumour, removed from the metatarsal bone of the great toe of a man nineteen years old. The interior of the tumour consists of cancellous bone, the cells of which are filled by marrow. Its exterior is formed by a thin layer of cartilaginous substance ; and it is invested by fibro-cellular tissue.

183. Section of a similar Tumour removed by operation from the lower and inner part of the Femur of a man nineteen years old. The interior of the tumour consists of cancellous bone, the cells of which are filled by marrow. Its exterior is formed by a layer of cartilaginous substance.

The tumour had been united to the femur by a narrow neck which, it is probable, was broken by external violence : for, in the operation, the narrow neck of the tumour was found connected with the femur only by soft substance, being fitted to an excavation in the femur upon which it had freely moved.

184. The Head of a Tibia in which there are numerous cavities, the remains of Abscesses within the bone.

185. Section of a Girl's face in which syphilitic Necrosis and Ulce-

ration affected large portions of the maxillary and malar bones. The separate portions of bone were exfoliated.

186. Sections of a Femur from the surface of which an osseous growth has arisen. The growth is of a flattened, elongated form, attached by a broad base, and with pointed processes directed downwards: it presents a cancellous texture surrounded by a thin shell of compact bone. The walls of the femur and its medullary cavity in the situation of the exostosis are perfectly sound.
187. Ring of Bone exfoliated from the end of a Tibia after amputation.
188. Portion of a Tibia exhibiting a superficial Necrosis of its walls. The formation of the groove between the dead and the living bone has commenced; and there is a deposit of new bone around the dead bone. The other section, macerated, is in the next Sub-series, A. 103.
189. Masses of Osseous substance with small portions of the bones of the Pelvis upon which they had formed. The osseous substance consists of fine filaments loosely cohering together: it formed part of a large tumour.
190. Sections of Lumbar Vertebrae with Melanotic matter deposited in the cancellous texture of their bodies.
191. Sections of a Rib with Melanotic matter deposited in its interior.
192. Portions of a Parietal and a Frontal Bone displaying the deposition of Melanotic matter in the diploe. In all these specimens the melanotic matter is deposited in circumscribed spots, like so much black pigment, in the bones. It does not form tumours, nor does the tissue of the bone in which it lies appear at all altered.

The three preceding preparations were taken from a woman, from whom the tumour, No. 43 in Series XXXV, was removed. Melanotic matter was

abundantly deposited in various parts of the body, the lungs, liver, ovaries, mammary gland, dura mater, and others.

193. A Clavicle, in which a piece of the cancellous texture near its sternal end has suffered necrosis. The dead bone lies loose within a cavity, in which it is partially exposed by apertures formed in the surrounding walls of the bone.

194. A Great Toe with its Metatarsal Bone removed by operation. There is a broad flat growth of cancellous bone from the under part of the distal extremity of the metatarsal bone.

The patient was a man about thirty years old. In consequence of a laceration of the soft parts in the sole, there remained a cicatrix on the under and inner edge of the foot. The irritation in the surrounding parts, excited by the pressure on this cicatrix in progression, was the cause of the growth of bone.

195. Sections of a Tibia, from a Boy eighteen years of age, exhibiting the effects of acute inflammation in its medullary tissue and periosteum. Lymph and pus are abundantly deposited in the cancellous tissue throughout its whole extent. Irregular ulcerations extend through the cancellous structure of the bone at each of its extremities, and have passed through the articular cartilages into the knee and ankle-joints; suppuration has also taken place between the epiphyses and the shaft. The periosteum, separated from the shaft of the bone in nearly its whole length, is very vascular, thick, pulpy, and velvet-like on its inner surface.

Other bones from the knee and ankle-joints of the same patient are in the next Series, No. 46.

196. Sections of the Humerus, from a young person in whom there had been long standing disease in and around the elbow-joint. A very thick layer of new osseous substance has formed around the shaft to the borders of its articular surface. This osseous substance presents a vascular cancellous texture, and is surrounded by a layer of compact substance which is covered by the periosteum of the original bone.

197. Sections of the Ulna from the same Elbow-Joint. The same

changes have occurred here; the shaft of the ulna is surrounded by a very thick layer of cancellous osseous substance covered by a layer of compact bone and by the periosteum of the original bone.

198. Sections of the Radius from the same Elbow-Joint. This bone, also, has undergone the same changes as have occurred around the humerus and ulna.

It is doubtful whether the new bone formed in this remarkable case were a deposit between the periosteum and the surface of the shaft, over which deposit a layer of compact tissue was developed; or whether the disease consisted in the expansion of the walls of the bones by the gradual separation of their outer from their inner layers, and in the formation of cancellous new bone between them.

199. Section of a Boy's Tibia, in which there is Necrosis of the middle half of the shaft, with detachment of the soft parts from the whole circumference of the dead portion. The separation of the dead bone from the living has commenced, and is marked on the cut surface and exterior of the bone by ulcerated grooves.

It is probable from the history of the case that the necrosis commenced in inflammation of the periosteum, followed by extensive suppuration around the bone.

200. The other half of the Tibia last described.

201. The lower end of a Femur. The whole of the exterior of the bone is roughened by the growth of irregular plates and pointed processes of osseous substance. A large canal formed by ulceration passes obliquely through the bone from before backwards, just above the condyles, and communicates widely with a cavity occupying nearly the whole of the interior of the internal condyle. Around the lower part of each condyle there is a broad rim of new bone. The space between the condyles on the anterior aspect of the femur is deeply ulcerated.

From a man thirty-five years old, who had had disease of the knee-joint for twenty-five years. Case Book, Vol. i., p. 136, No. 161.

202. The inferior angle of a Scapula with a section of a tumour growing from it. The base and interior of the tumour consist of cancellous bone, which is continuous with the cancellous

tissue of the scapula. The exterior is formed by a layer of cartilage of irregular thickness, and the whole is invested by fibro-cellular tissue.

Presented by W. Beaumont, Esq.

203. Section of a Tumour occupying parts of the seventh, eighth, and ninth ribs of the left side. The tumour is composed of a highly vascular medullary substance, in which there are some cells that were filled with serous fluid, and a few small masses of coagulated blood. The osseous substance of the ribs appeared to be expanded within the tumour, which in several parts presented small points of bone. The cartilage of one of the ribs is completely surrounded by the morbid structure, but is itself unaltered.

204. Portion of the Femur of a Child which separated in consequence of Necrosis. The separated portion includes the whole shaft and neck of the femur, with the exception of some small pieces of the outer layers of the shaft.

The recovery of the child after the separation was complete; the thigh was firm and not much shortened.

205. Portion of a Parietal Bone which separated in consequence of Necrosis.

206. Sections of the upper part of a Femur from a very aged woman. Its texture is remarkably soft and light, and contains an abundance of fatty matter which, in maceration, has assumed the appearance of adipocire. The walls of the Femur are at the thickest part not more than a line in thickness: the neck is shortened and is rather less oblique than is natural: the head is reduced in size and irregularly flattened.

207. Portions of a Humerus, Radius, and Ulna. The sections of the humerus exhibit thickening of the medullary membrane, which is in some parts upwards of a line in thickness, and presents an uneven velvet-like surface. A portion of cancellous tissue has separated after necrosis and lies loose in the medullary cavity. A piece of glass is passed through a long

fistulous passage leading from the medullary cavity through the lower end of the humerus into the elbow-joint. The greater part of the articular cartilage is removed from the ends of the bones forming the elbow-joint; and the remains of the synovial membrane are thickened.

208. Portion of a Lower Jaw, comprising one side of the bone from the angle to the symphysis, which was removed by operation from a young woman. A soft medullary growth, originating in the interior of the bone, has caused the expansion of its surrounding walls. In the upper half of the section the morbid structure has been separated from the cavity in which it was imbedded.
209. The Metacarpal Bone of a Little Finger. The bone is enlarged, apparently by an expansion of its walls; an osseous tumour growing from this bone had been removed some time previous to the amputation of the finger.
210. Portion of the wall of a Tibia separated by exfoliation. The dead bone, which had been diseased some time before it perished, is porous and rough on its outer surface: it comprises a part only of the thickness of the wall. The disease was connected with syphilitic periostitis.
211. Sections of the extremity of a Stump after amputation above the knee. The lower end of the bone protrudes nearly an inch beyond the extremity of the granulations upon the soft parts. The protruded portion and that immediately adjacent to it had died, and were in process of exfoliation. On the surface of the section, the line of separation between the dead and the living bone is marked by an arched layer of soft fleshy substance, like a layer of granulations, which extends across the cancellous tissue, and is continued less distinctly through the compact wall. In the upper section, the periosteum and soft parts have been separated from one side of the bone. The surface of the latter is left rough and irregular, and in the lower part of the periosteum a mass of soft spongy

osseous tissue has formed, which nearly surrounds that part of the shaft which was not in a state of necrosis.

From a patient in whom the femoral artery was tied for the cure of an aneurism consequent on a wound. After the operation, extensive sloughs formed in the leg, and it was deemed necessary to amputate it above the knee. The stump sloughed, and the femur protruded; and the parts preserved in the preparation were removed by a second amputation, a month after the first. The patient subsequently recovered completely. A wax model of the leg before the first amputation is preserved, Cast 140. Case Book, No. 169, p. 145.

212. Section of the lower end of a Femur, in which nearly all the cancellous tissue within the condyles and for a short distance up the shaft is removed, and its place is occupied by a mass of brain-like medullary substance. The greater part of this substance is nearly white, but there are many spots in it of a deep red colour, from effused blood; and at the upper part is a section of a small cavity, which was filled by a soft gelatinous material. The growth of the mass has expanded the internal condyle and the posterior part of the femur into a large round sac, of which the walls are partly formed by the articular cartilage and the periosteum.

213. Section of the anterior part of a Tibia, in which there are numerous small effusions of blood between the periosteum and bone, and in the superficial layers of the bone.

From the same limb as the preceding specimen. The patient was a man twenty-seven years old; the disease had existed twelve months with obscure symptoms, and made steady progress till the limb was amputated. Case Book, Vol. i. p. 145, No. 169.

214. Section of the last Phalanx of a Great Toe. A small osseous tumour has grown from the anterior and upper part of the bone, and has elevated the nail; it is formed of cancellous tissue surrounded by a thin layer of compact substance.

215. Half a Pelvis, exhibiting the effects of the growth of Hydatids within the bones. The walls of the ileum are separated, and are in many places absorbed, so that there are large apertures in them, which open into a cavity extending through its whole interior. The same cavity communicates with that of the pelvis by a large opening in the

acetabulum, and, by other openings, with a cavity in the interior of the sacrum, and with the spinal canal. There are several apertures in the posterior part of the sacrum. All these cavities were filled with hydatids, which had also protruded through the apertures in the walls of the bones, and were contained in cysts formed by the thickened periosteum and other tissues.

216. Part of the *Acephalocyst Hydatids* which were contained in the Bones just described. Some of them are entire, but the majority have been ruptured.

The patient was an elderly woman. There were other hydatids in a large cyst connected with the ovary. The disease was of long standing, and the patient died with suppuration of some of the hydatid cysts.

217. Section of an *Os Calcis*, in which pus is diffused in many parts of the cancellous tissue. The whole tissue of the bone was soft, and could be easily cut with a knife.

From a man seventy years old, all the bones of whose tarsus and metatarsus were similarly diseased.

218. Section of a portion of a *Tibia* after compound fracture. The whole thickness of the wall at the end of the bone, and a part of its thickness for three inches up the anterior and inner aspect of the shaft, have perished, and are separated from the living tissue by a deep groove. The medullary tissue has retained its vitality, and is increased in vascularity. A layer of new bone, which in some parts is nearly half an inch thick, has formed on the surface of the shaft around the dead portion, and is invested by the original periosteum. The new bone is soft, spongy, and vascular. A portion of the periosteum has been reflected from the upper part of the shaft, to exhibit the formation of new bone beneath it.

219. The other section of the *Tibia* and part of the *Fibula* from the same limb, after maceration. An inch of the extremity of the fibula has perished. The surface of the adjacent part of the shaft is covered by new bone, which is especially abundant at the lower part, and has coalesced with the new bone on the corresponding part of the tibia. A part of

the new bone has been separated from the shaft of the tibia, to show that it was all formed in the periosteum, or between it and the surface of the old bone, and that the latter is unaltered.

220. Portion of a Femur, of which the lower extremity is expanded into a large Cyst, which was filled by liquid and coagulated blood and a small quantity of brain-like medullary substance. The cyst is nearly globular; its walls are from a line to two lines in thickness, composed of thin plates of bone and fibrous membrane, smooth externally, and presenting internally at some parts a rough surface of bone, and at others numerous prominent decussating fibrous bands and cords, like the texture of the basis of a spleen or of erectile tissue. To these bands, as well as to the osseous surface, loose flocculi and small portions of brain-like substance are adherent. Below, the cyst is bounded by the articular cartilages, of which the texture is unaltered; above, by the shaft of the femur which terminates abruptly just before it is expanded into the cyst. The shaft above the cyst presented numerous small spots of effused blood, like ecchymosis beneath the periosteum.

From a gentleman thirty years of age, in whom the tumour had been two years in progress. Four years after the amputation of the limb he was in good health.

221. The upper part of a Femur, the surface of which is irregularly, and for the most part superficially, ulcerated. Small portions only of the external lamellæ remain, and these are in many parts covered by a thin layer of new bone. The epiphyses of the great trochanter and the head of the bone have separated.

These changes were consequent on sloughing over the great trochanter, which ensued in a prolonged case of psoas abscess in a young subject.

222. The lower part of a Femur, from the front of which a broad flat exostosis had grown, and was removed by operation. The surface from which the exostosis was cut is rough: it is formed of cancellous tissue of healthy aspect. The exostosis was composed of a similar tissue invested by a thin layer of compact substance.

The upper margin of the base of the exostosis is very nearly three inches above the border of the articular cartilage of the trochlea of the femur; but it

was all covered by the synovial membrane, and all projected into the cavity of the knee-joint. It had been growing for two or three years, and had produced great pain and frequent attacks of inflammation of the knee-joint. The patient died with deep abscesses around the femur, about ten days after the operation.

223. Section of a Clavicle, in the interior of which a firm medullary substance has been deposited in large quantity. The posterior wall is but little changed; but the greater part of the anterior wall is lost in the interior of the tumour which grew to a great extent forwards. The shaft was fractured (with only a slight force), and its portions are widely displaced without any attempt at union.

224. The other section of the same Clavicle after maceration. It shows more distinctly the characters of the osseous structure into which the anterior wall of the bone, which was chiefly involved in the growth, was changed.

From a man sixty years old. Four years before death, the growth had the aspect of a small tumour growing within and expanding the walls of the clavicle. After this, enormous masses of a similar medullary substance formed around the clavicle, and in the subcutaneous tissue, and other parts of the body.

225. Part of the Skull of a man about forty years old, who had a large malignant tumour of the face. The tumour appears to have originated at the nasal process of the left superior maxillary bone and at the left nasal bone, upon which there is a projecting growth of processes and plates of bone. The tumour, extending from this centre, produced absorption of the inner and lower part of the left orbit, the inner and anterior part of the right orbit, the septum of the nose, the turbinated bones, and the middle and posterior parts of the palate. To a slight degree also it destroyed the left cribriform plate of the ethmoid bone, and the adjacent part of the upper wall of the orbit. At nearly all the parts of the bones upon which the tumour encroached, there is a thin everted border of bone.

226. The last phalanx of a Great Toe, on the inner margin of which, near its distal extremity, there is a flattened, broad, Osseous Tumour, composed of hard finely cancellous texture, and attached by a narrow base. The adjacent part of the phalanx has spongy new bone deposited upon it.

227. A large portion of the Upper Jaw-bone of a child, exfoliated after Cancrum Oris.

228. The last phalanx of a Thumb which exfoliated, almost entire, in a case of Whitlow.

229. The lower part of an Os Coccygis which necrosed and exfoliated after a fall on the buttocks.

The patient had imperfect power over the lower extremities from the time of the accident, and died after long-continued suffering with extensive abscesses in the perineum. The dead bone was removed after death.

Presented by Carston Holthouse, Esq.

230. The upper half of a Femur, round a portion of which a thin, flat, nodulated, medullary growth, of a soft, spongy, and obscurely-fibrous texture formed. The shaft at the part enclosed by the diseased structure was broken by a slight force. Its texture at this part appears soft, and is perforated by many small apertures.

From a woman forty-three years old, whose right breast had been removed, with a medullary tumour in it, three months before death.

231. Sections of a small oval Tumour, composed of cartilage and bone, which was removed from the inner and lower part of a Femur. The cartilaginous part of the tumour forms a smooth layer, from one to two lines in thickness, which invests the osseous part, and is itself invested by a thin layer of fibro-cellular tissue. The osseous part of the tumour is formed of a delicate cancellous texture, filled with medulla, and was attached to the femur by a narrow base.

232. The base of a Skull, from an elderly woman who appeared to have been long in the habit of wearing a plug to close an opening in the palate. The opening, gradually enlarging, attained such a size that nothing remains of the palatine portions of the superior maxillary and palate bones, and the alveolar border of the jaw is reduced to a very thin plate, without any trace of the sockets of the teeth. The antrum is on both sides obliterated by the apposition of its walls, its inner wall having probably been pushed outwards as the plug was enlarged to fit the enlarging aperture in the palate.

Nearly the whole of the vomer also has been destroyed, and the superior ethmoidal cells are laid open.

The plug is preserved: it is composed of a large circular cork, with tape wound round it, and measures an inch and three quarters in diameter and an inch in depth.

The history of the patient is unknown. She was brought from a workhouse to the dissecting rooms, with the plug tightly and smoothly fitted in the roof of the mouth.

233. Section of a Femur affected with *Mollities ossium*. The walls of the bone are thin, soft, and flexible, and their lamellæ are partially separated. The place of its medullary and cancellous tissue is occupied by soft, jelly-like, transparent fat, of various shades of yellow and pink: some of it was deep crimson. A similar kind of fat appeared to be diffused through the proper texture of the walls. Scarcely any of the osseous part of the medullary texture remains, except a thin layer beneath the articular surface of the bone. The periosteum and articular cartilage are healthy.

234. Sections of the Upper part of the same Femur, and of the Patella of the same patient, macerated. The fat diffused through their whole tissue is converted into adipocire. The neck of the femur is a little less oblique than is natural, but it is not shortened, nor is the shape of the head altered.

From a lady thirty years old. The disease had been some years in progress, and had affected in various degrees all the bones of the extremities. This femur had been fractured by a slight force shortly before death.

Presented by R. W. Tamplin, Esq.

235. Section of an Ilium and of a Medullary Tumour covering a large extent of both its surfaces and extending through its substance. The tumour is of oval form, and reaches from the crest of the ilium to near the margin of the acetabulum. It is composed of a soft, spongy, and flocculent, reddish medullary substance in which a few small cysts are scattered. It is covered in by the thickened periosteum of the ilium. At its centre the substance of the ilium is irregularly broken and absorbed, so that here the tumours on each side of the bone are connected into one mass by the morbid substance diffused through its texture. Portions of the iliacus and gluteus medius

muscles are left connected with the periosteum, over which they were spread out in the growth of the tumour.

236. Another section of the same parts. A portion of the tumour has been so removed as to show the surface of the wall of the ilium on which it rested, and parts of which are absorbed in minute round holes and irregular spaces through which the growth without appears to dip in, and be connected with that within the ilium.
237. Another section of the same Ilium macerated, to show the same partial absorption of its walls, and the other changes which it has undergone by the growth of the tumour.
238. Portion of the Periosteum of the same Ilium, with fragments of the Medullary Tumour held together by fibrous bands and cords, and blood-vessels, somewhat like those of an erectile tissue. These pass from the inner surface of the periosteum, intersecting the substance of the tumour.
239. A Medullary Tumour, removed from the arm of the patient from whom the four preceding specimens were taken. It is of elongated oval form, soft and spongy in its texture, and has a few cells scattered through it. Its proper colour is pale, and nearly white: but it is blotched with many spots of vascularity and effused blood. It is invested by a thin fibro-cellular capsule, with which a part of the brachial artery and median nerve are closely connected.
240. Portion of the Heart of the same patient, with a small Medullary Tumour imbedded in its muscular substance near its apex.
241. The Lower part of the Aorta and the iliac arteries of the same patient. The left common iliac artery was tied three days before death. Its internal and middle coats are cut through by the ligature: above the line of section is a portion of a large clot which had formed above the ligature.

The patient was a man forty-two years old. The tumour in the arm had existed for ten years, and had not grown for three years. The tumour of the ilium had been growing rather quickly for about a year. It presented a distinct, deep, heavy pulsation, a bruit, and many other signs like those of an aneurism:

the common iliac artery was therefore tied. The patient died on the third day after the operation with suppuration in the track of the wound. The case is recorded by Mr. Stanley in the *Medico-Chirurgical Transactions*, Vol. xxviii., p. 317; London, 1845.

242. Sections of a Tibia, of which a portion of the cancellous tissue near its lower end has suffered Necrosis and been separated. The sequestrum lay loose in a cavity lined by thin organized membrane. In one of the sections the half of the sequestrum is retained in its place; in the other, it has been removed to expose the interior of the cavity. The walls of the bone around the cavity are slightly enlarged, and there are two ulcerated apertures extending through them: but their texture, as well as that of the periosteum, is nearly healthy. There is also a wide ulcerated aperture through the articular surface of the bone, and nearly the whole of its cartilage is removed.

From a boy seven years old, in whom the disease, arising from no evident cause, had existed for some years. Numerous abscesses about the ankle made amputation necessary.

Presented by Joseph Hodgson, Esq.

243. An Os Calcis, in which there was Necrosis of a portion of the cancellous tissue. After the separation of the sequestrum, abscesses formed in and around the bone, and there was abundant deposit of new bone upon its surface. Ulceration also extended through the superior articular surface of the os calcis; and ankylosis between it and the astragalus followed.

From a man twenty-two years old. The disease commenced shortly after a rusty nail had been driven into the heel, piercing the bone. The patient recovered after the amputation of the foot.

244. The anterior surface of a Patella, which exfoliated after an injury to the front of the knee.

245. Sections of a small Tumour from the Tibia. Its base is narrow, and consists of cancellous bone with medulla: and this is covered by a layer of cartilage from a quarter of an inch to half an inch in thickness.

Presented by Joseph Hodgson, Esq.

246. Sections of a Cuneiform Bone necrosed and separated. Its tissue is of a greenish colour by infiltration of pus. Its articular surfaces are superficially ulcerated.

The disease was of long standing, and the soft parts about the tarsus were the

seat of numerous abscesses and fistulous passages ; but this bone alone was materially diseased. The patient, a young man, recovered after the amputation of the foot.

247. Sections of the front of a Lower Jaw, which was removed with a Tumour, like Epulis, of the gum. The tumour, of a rounded oval form and a firm obscurely fibrous texture, rose to the height of half an inch from the margin of the jaw and overlapped both its surfaces. But one of the sections shows that the part of the jaw on which the tumour rested is in its own texture sound : its surface was smooth and the periosteum healthy.

From a young woman in whom the disease had made slow progress.

248. Section of a Frontal Bone, with numerous lens-shaped Tumours, of various sizes from a line to two inches in diameter, thickly scattered through its substance. They grow from both surfaces, and from the substance of both tables ; there were also several in other parts of the skull, and some on the dura mater. The tumours consist of a soft medullary matter ; and in many of them delicate osseous fibres, standing vertically on the surface of the skull, are imbedded. In the situation of the largest tumour, parts of which grow from corresponding portions of both tables of the skull, a similar medullary substance is diffused through the diploe.

249. Another Section of the same Frontal Bone macerated, and showing more plainly the osseous portion of one of the tumours, and the altered state of the diploe where the medullary matter was deposited.

250. Section of a Humerus, around the middle of the shaft of which a firm obscurely fibrous medullary tumour has formed. Within the tumour, the texture of the humerus, apparently infiltrated with medullary matter, is soft and brittle, and was broken during life by a slight force. The disease extends for a short distance into the medullary canal above and below the fracture ; and a small round mass of cancer, like that investing the shaft, is imbedded on the inner surface of the wall.

From an old lady who had suffered for some months from pains like those of rheumatism in the arm. She died shortly after the fracture of the humerus.

Presented by Herbert Evans, Esq.

251. Part of a Lower Jaw, including one of its rami and its symphysis, imbedded in a large, firm, dense, pale and obscurely fibrous Tumour, near which also are one or two smaller tumours of the same kind resting on its surface, but not connected with the jaw. The tumour projects with an ulcerated surface into the side and floor of the mouth, displacing the tongue and soft palate, and rising as high as the condyle of the jaw.

The specimen was taken after death from the patient from whom the tumour in No. 150 was removed. She survived the operation about two years.

Presented by George Harrison, Esq.

252. An Os Naviculare from an old Horse, exhibiting absorption of its articular cartilage and ulceration of the subjacent bone.

253. Section of the hind Leg of a Dog, in which the Knee and Ankle-Joints are surrounded by growths, which consist of a substance like fibro-cartilage and of bone.

254. Section of the opposite hind Leg of the same Dog, with exactly similar growths. The soft parts have been removed by maceration. The osseous parts of the growths thus appear formed principally of hollow crooked branching tubes, like masses of coral round the joints. The bases of the growths are fixed on the surfaces of the articular ends of the bones; and bone, of the same general character, but much less abundant, is deposited on the patella, the shafts of the femur and tibia, and all the bones of the foot.

Presented by W. J. Bayntin, Esq.

255. The Radius and Ulna of a Dog, with similar growths of coral-like Bone on a large portion of their surfaces. Many others of the bones were similarly diseased.

Presented by W. S. Ward, Esq.

256. Portion of a Parietal Bone, the tables of which, without any alteration of their texture, are separated to the distance of half an inch; the place of the diploe being occupied by very hard and heavy, spongy bone. The disease occupied the greater part of the parietal bone, producing a considerable elevation of the outer table, but no depression of the inner table.

Presented by John Avery, Esq.

SUB-SERIES A.

DISEASES OF BONE.

The Specimens not contained in Bottles.

HYPERTROPHY, A. 39, 43, 45.

ATROPHY, A. 92, 93, 151, 152, 157, 158, 159; and B. 45, 46.

RICKETS, A. 33? 138 to 150.

INFLAMMATION.

Expansion, by separation of the layers, of the walls of a bone, A. 1, 3, 4, 16, 17, 18, 27, 42, 46.

Morbid elongation, with enlargement, A. 3? 42? 46, 91?

Formation of new bone,

On the external surface.

In nearly uniform layers, A. 2, 5, 6, 7, 9, 11, 12, 16, 21, 31, 38, 44, 81, 156; and many specimens of Ulceration and Necrosis.

Node-like, A. 2, 8, 10, 13, 19, 20, 40, 42, 76, 86, 156.

Under ulcers of the integuments, A. 14? 15, 22, 23, 24, 28? 36, 47, 48.

In the substance of the wall, or compact tissue, A. 3, 4, 19, 27, 36, 38, 46.

In the cancellous tissue, or diploc, A. 19, 29, 30, 31, 37, 41, 49, 155.

Ossification of interosseous ligaments and other tissues between bones, A. 14, 15, 16, 25, 47, 55; and some of the specimens referred to in the next Sub-series, as examples of Osseous Anchylosis.

Ulceration.

Simple, A. 53, 54, 57, 80, 83?

Syphilitic.

Tuberculated, A. 35, 52, 56, 58, 59, 60, 66, 67, 68, 69, 71, 72, 73, 82, 84? 88, 89.

Annular, A. 63, 65, 70, 109.

Malignant; extending into the bones from the soft parts, A. 51, 55, 77, 78.

Absorption of bone in consequence of pressure from without, A. 49, 64, 74, 75, 85, 87.

NECROSIS.

Characters of dead bone.

When previously healthy, A. 104, 108, 110, &c.

When previously diseased, A. 105, 106, 111, 112.

Process of separation of the dead bone.

Increased vascularity of the adjacent living bone, A. 105, 106, 108, 111.

Formation of a groove around the dead bone, by the absorption of the edges of the living bone, A. 103, 110, 104, 106, 105, 111, 90.

Formation of new bone, A. 94, 95, 103, 104, 106, 118, 119, 121, &c.

- Necrosis affecting chiefly the outer layers of the wall of a bone, A. 57, 96, 103, 108, 110.
 chiefly the inner layers, A. 94, 97, 98, 100, 118, 119.
 the whole thickness of the wall, A. 95.
 chiefly the cancellous tissue, A. 36, 99, 101, 102, 115, 122.
 the whole thickness of a bone, A. 90, 104, 105, 106, 111, 112, 113, 121.
 the articular portions, 112, 114.
 Necrosis of the Skull, A. 90, 104, 105, 106, 107, 108, 110, 111, 112.
 Vertebrae, A. 115.
 Femur, A. 95, 96, 99, 101, 118.
 Tibia, A. 36, 57, 94, 97, 98, 100, 102, 103, 113, 114, 119, 121, 122.

TUMOURS OF BONES.

- Osseous, A. 124, 131, 133, 134, 136.
 Growths of bone resembling osseous tumours, A. 126 to 130, 135, 137, 153, 154.
 Osteoid, A. 132.
 Cancerous, A. 79.

A. 1. A Femur, Tibia, and Fibula, the shafts of which are generally enlarged. The enlargement is due to thickening of their walls by separation of the lamellæ, and to the formation of new bone on their surfaces. In the Femur, the osseous filaments and lamellæ of the cancellous tissue are thickened.
 From the same person as the enlarged tibia in the preceding Series, No. 74.

A. 2. Two Femora, two Tibiæ, and two Humeri, parts of the walls of which are thickened, chiefly by addition of new bone to their exterior. The disease affects symmetrically the corresponding parts of the opposite bones*.

A. 3. Two Tibiæ, the shafts of which are gently curved forward, and are generally and symmetrically enlarged. The chief increase is in the anterior wall, which is in some parts an inch thick, and of which the whole texture is heavy, dense, and hard. Compare A. 46.

A. 4. A Tibia partially enlarged, chiefly by the formation of new bone round the middle third of its shaft.

* Whenever, in this or any other Series, two or more parts are described together, they may be understood to have been taken from the same person.

- A. 5. Two Femora, the shafts of which are generally enlarged.
- A. 6. Two Femora enlarged like the preceding. They show, as do also some of those already described, the grooves impressed on the surface of the thickened bone by the large transversely-running vessels of the periosteum. Three such grooves lying close together are seen above the inner condyle of the left femur, in one of which an artery, and in the others its associated veins, were lodged.
- A. 7. A Tibia generally enlarged.
- A. 8. A Tibia of which the middle of the shaft is enlarged by the formation of new bone on its surface; a node is formed by an accumulation of the new bone on a part of its anterior surface. The articular portions of the bone in this, as in all the preceding specimens, are healthy.
- A. 9. The Tibia of a young person, generally enlarged by the formation of new bone on its surface.
- A. 10. A Tibia and Fibula partially enlarged, and presenting several nodes on their subcutaneous surfaces. The nodes consist of new bone deposited on the surface in the form of slight, gradually-rising, convex, oval elevations.
- A. 11. A Femur, Tibia, and Fibula, with thin node-like deposits of new bone on their surfaces.
- A. 12. A Tibia generally enlarged. Three small ulcerated apertures through its walls above the malleolus make it probable that the enlargement was connected either with necrosis or with syphilitic ulceration.
- A. 13. Sections of a Tibia partially enlarged, and with nodes on its anterior surface. The sections of the nodes show that the disease which constitutes them is confined to the wall of the bone.
- A. 14. A Tibia and Fibula, with large plates and processes of new

bone upon their surfaces, and with ossification of the lower part of the interosseous ligament.

- A. 15. A Tibia and Fibula generally enlarged, with ossification of the interosseous ligament. There is a circumscribed oval elevation of new bone on the front and lower part of the tibia, over which it is probable there was an old ulcer of the soft parts.
- A. 16. Sections of a Tibia and Fibula. Both bones are thickened, chiefly by expansion of their walls, and there is ossification of the interosseous ligament.
- A. 17. Sections of a Humerus. The middle of the shaft is unnaturally curved, and is enlarged, chiefly by the expansion of its walls. A small quantity of new bone is deposited on the surface of the enlarged part.
- A. 18. A Femur enlarged by the deposit of new bone on its lower part immediately above the condyles.
- A. 19. Section of a Tibia partially enlarged: the other half of it is in the preceding Series, No. 53. The enlargement is caused by the formation of a thick layer of new bone, like a node with a coarsely-nodulated surface, round the middle of the shaft. In the corresponding part of the medullary tissue, the osseous filaments and lamellæ are thickened and indurated, and have encroached on the medullary spaces till they are nearly obliterated.
- A. 20. Portion of a Tibia with a node-like enlargement of the middle of its shaft.
- A. 21. Portion of a Fibula partially enlarged.
- A. 22. Portion of a Tibia partially enlarged. On its front surface there is a circumscribed oval elevation of new bone with an abrupt margin, over which it is probable there was an ulcer of the soft parts.

- A. 23. Sections of a Tibia, exhibiting a circumscribed thickening and induration of its anterior wall; probably the effect of an ulcer in the investing soft parts.
- A. 24. Section of a Tibia similarly diseased.
- A. 25. A Tibia and Fibula with part of the Tarsus. The tibia and fibula are enlarged, and there are sharp-edged plates and processes of new bone upon their surfaces. The lower part of the interosseous ligament is ossified, and the os calcis, astragalus, os naviculare, and os cuboides are all united by bone.
- A. 26. Section of a Femur, on the surface of which numerous irregular plates of new bone are deposited.
- A. 27. Section of a Tibia enlarged in its lower third by the external formation of new bone. The new bone is penetrated by some small irregular ulcers, probably of a syphilitic nature.
- A. 28. Portions of a Tibia and Fibula thickened in their walls, and with plates of new bone upon their external surfaces.
- A. 29. Portions of a Skull-Cap, exhibiting obliteration of many parts of the diploe, with irregular thickening and porosity of its tables, and deepening of the arterial grooves upon the internal table.
- A. 30. A Skull-Cap. Both its tables are increased in thickness and density, and its diploe is nearly all consolidated. There are appearances of healed ulcers on the opposite surfaces of the left parietal bone; and the apertures for vessels penetrating the tables are very numerous.
- A. 31. A Skull-Cap, generally thickened and indurated, with circumscribed deposits of new bone on several parts of its internal surface.
- A. 32. A Skull-Cap of natural thickness, but with remarkable deepening of the arterial grooves on its internal aspect. See also A. 74.

- A. 33. Portion of a Skull-Cap increased in thickness, and all, except the surfaces of the tables, converted into a uniform, spongy, or porous tissue, apparently by a slighter degree of the same disease as is shown in No. 36 in the preceding Series. There is the cicatrix of an ulcer on the middle of the frontal bone.
- A. 34. Parts of a Tibia, Clavicle, Humerus, and Skull, from a man who died with syphilis. The shaft of the tibia is enlarged by the expansion of its walls and by external formation of new bone. In one part, the walls and the new bone covering them are penetrated by small irregular ulcers. The same disease has affected the middle of the clavicle; and in it the ulceration has extended so far that a slight force broke the remaining portion of its shaft. In the humerus the lower half of the shaft is thickly covered by light and porous new bone, through which many ulcers of various size have penetrated; some of these extend deep into the original wall of the humerus, portions of which also appear to have suffered necrosis. In the skull the outer tables of the frontal and right parietal bone present an uneven tuberculated surface, seamed and starred, like the surface of confluent small blisters; through this, numerous distinct and coalescing ulcers penetrate, and reaching the diploe spread therein in wider spaces, and in a few instances pass also through the inner table. The outer table of the left parietal bone is tuberculated but not ulcerated. There is a similar but less extensive disease on the inner table of the right parietal and occipital bones.
- A. 35. The Skull, Femur, and Bones of the right upper extremity of a man who died with syphilis. They present, in a less advanced form, similar appearances to those last described. The tuberculated character which the outer table of the skull assumes, previous to its ulceration, is shown on the upper part of the frontal bone; and the stages in the progress of the little ulcers which penetrate and spread through the new bone, may be traced on the clavicles in which the process has just begun, and on the radius and humerus on which it is more advanced; while on the femur, whose shaft like theirs is

much enlarged by the formation of new bone, there are many small round and oval apertures with smooth borders, indicating that similar ulcers have been healed.

Presented by William Beaumont, Esq.

- A. 36. Sections of a Tibia and a Fibula. The shaft of the tibia is generally enlarged and hardened. Upon its external surface there are irregular deposits of bone, sharp-edged and overhanging. Internally it presents a nearly uniform, closely cancellated texture, in which there is hardly a distinction between the walls and the medullary cavity. Just above the ankle-joint, in the situation of the medullary canal, there is an irregular elongated cavity communicating externally by a small round aperture, or cloaca, through the walls. It is probable therefore that there was necrosis of a portion of cancellous tissue at this part. The fibula is thinly covered by new bone.
- A. 37. A Skull-Cap, in which there is an irregular increase in the thickness of the diploe, producing large convex elevations of the outer surface about the prominences marking the original centres of ossification of the parietal bones. The diploe is consolidated as well as thickened: the outer table is smooth and healthy; the inner table is deeply impressed by the vascular grooves. The cavity of the skull appears to have been small, especially in the parts beneath the external elevations.
- A. 38. Two Tibiæ and two Femora, exhibiting a considerable increase in the thickness and density of their walls. The section of one of the femora shows that the thickest part of the wall is composed of nearly uniform compact bone.
- A. 39. A Skull-Cap, exhibiting numerous small irregular portions of bone projecting from the internal surface of the frontal bone. The diploe in the situation of these bony projections is considerably thickened, and indurated: the inner table, also, in correspondence with the increase of the diploe, is carried inwards, narrowing at this part the capacity of the skull.

- A. 40. A Tibia exhibiting an irregular thickening of its walls in the middle and anterior part of its shaft. An ulcer in the soft parts covering the thickened bone had existed many years, and on this account the limb was amputated. Two distinct changes may be here recognized: namely, thickening by separation of the layers of the wall, and deposit of new bone on its exterior.
- A. 41. A Skull exhibiting through its whole extent an increased thickness and density of both the outer and inner tables. The increase affects also the bones of the face, but in a somewhat less degree. The diploe is very hard and close-textured.
- A. 42. A Tibia, the shaft of which is curved forwards and inwards, and enlarged in its upper half. On its anterior surface there are circumscribed deposits of new bone, such as are found under ulcers of the integuments. The curvature of the tibia is not like that which takes place in rickets, but like that in A. 46, which is due to the tibia becoming elongated at the same time that it enlarges, and to the separation of its ends from each other as it elongates being prevented by its connexion with the fibula.
- A. 43. Sections of a Skull-Cap diseased like A. 37; but in a rather less degree.
- A. 44. A Tibia and Fibula. The shaft of the tibia is generally enlarged by external deposits of new bone. The head of the fibula is united by bone to that of the tibia.
- A. 45. A Skull-Cap exhibiting a great increase of thickness of the diploe, and of portions of the inner table, at its anterior part. The inner surface of this part has an irregular rocky appearance from the deposit of hard new bone. The outer surface is smooth and healthy.
- A. 46. Sections of the Tibia of a Lad about eighteen years of age. The left tibia is nearly an inch longer than the right; in its increase of length it has become curved, its ends, confined by

their attachments to the tibia, having been hindered from separating more widely. The left tibia is increased in thickness as well as in length, chiefly by the expansion of its walls. The front wall is, in parts, an inch thick and composed of nearly uniform cancellous tissue: it is also more lengthened than the other walls.

- A. 47. Lower halves of a Tibia and Fibula firmly united for two inches above the ankle-joint, by the growth of a large irregular mass of bone from their posterior and outer surfaces. There is a deep groove for the passage of the tendons of the peronæi muscles behind this growth.

A large ulcer had for many years existed in the outer and back part of the leg immediately above the ankle-joint.

- A. 48. Lower half of a Tibia, of which the walls are thickened and increased in density. The chief increase is in the anterior aspect of the shaft, where, also, the surface of the new bone on it is peculiarly rough, coral-like, and spongy; characters indicative of new bone formed in circumstances of constant irritation.

The irritation arose in this case from an ulcer of the integuments which had existed for a long time previous to the amputation of the limb.

- A. 49. Skull of a Man, who, fifteen years before death, received a violent blow on the head, and from whom, two years before death, the right eye was extirpated. All the upper part of the skull is increased in thickness and density. Its inner surface, especially on the right side, is marked by an unusual number of grooves and small apertures for blood vessels. The sutures are not obliterated. The right malar bone is somewhat depressed towards the orbit, and the external and inferior angle of the right orbit is not so deep as that of the left. The right angle of the jaw is superficially ulcerated by the growth of a large cancerous tumour of the adjacent lymphatic glands.

The eye which was extirpated is preserved in Series IX., No. 17, and a portion of the thickened dura mater which covered the right hemisphere of the brain, in Series VI., No. 63.

- A. 50. Portion of a Tibia, on the external surface of which, above the malleolus, new bone has been formed on a circumscribed oval space. A part of the new bone has been destroyed by ulceration, which probably extended into it from an ulcer of the integuments.
- A. 51. A Tibia and Fibula. Ulceration, extending probably from a malignant disease of the integuments, has penetrated the front wall of the tibia, destroyed its medullary tissue, and made small apertures in its posterior wall. A deposit of bone has taken place upon the fibula, and there is ossification of the interosseous ligament.
- A. 52. Portion of a Tibia exhibiting superficial ulceration, with node-like thickening of the bone around the ulcerated surface: probably the effects of syphilis.
- A. 53. Portion of a Tibia exhibiting superficial and extensive ulceration of its upper half, with new bone about the borders of the ulceration. A fleshy tumour, originating in the soft parts, completely surrounded this part of the bone.
- A. 54. Portion of a Tibia exhibiting deep ulceration of its walls, with thickening and induration of the surrounding bone.
- A. 55. Portions of a Tibia and Fibula. Ulceration of the walls of the tibia has penetrated to its medullary cavity. The fibula is enlarged by heavy new bone, and the interosseous ligament is extensively ossified.
- A. 56. An Os Frontis, exhibiting ulceration of its outer table penetrating to the frontal sinus. The border of the ulcer is surrounded by an unequal ring of new bone.
- A. 57. Section of a Tibia with superficial ulceration, necrosis, and a considerable deposit of new bone around the ulcerated surface. The other Section is No. 51, in the preceding Series.

A. 58. A Skull-Cap, exhibiting some of the effects of syphilis. In some situations there has been a complete destruction of the bone through both tables of the skull; at the borders of the apertures thus made, the disease seems to have stopped, and the parts appear to have cicatrised, for their edges are thin, smooth, and hard. In other situations, ulceration appears to have been in progress, the bone in these parts exhibiting a rough surface, a porous texture, and many small deeply penetrating holes. The spaces left by the removal of the bone are filled by membrane in which there are several small deposits of new bone: and the outer surfaces of all the portions of the skull which remain between the ulcers, are tuberculated, seamed, and starred, as in A. 34.

A. 59. A Skull-Cap, large portions of which have been destroyed by syphilitic ulceration like that in the preceding specimen.

The two preceding specimens were taken from patients who died in the venereal wards of the hospital while Mr. Pott was surgeon.

A. 60. Portions of a Skull-Cap, of which the outer table is tuberculated and irregularly ulcerated. The diploe and inner table are thickened and consolidated, and the inner table appears to have been very vascular.

These changes had their origin in the effects of external violence.

A. 61. A Skull-Cap, exhibiting extensive ulceration of the outer table, and ulceration to a less extent of the inner table. The parts remaining between the ulcers have a tuberculated surface.

It is presumed these changes were consequent on the formation of matter within the diploe.

A. 62. A Skull-Cap, with numerous minute round holes in both the outer and inner tables. Generally, the absorption of the outer corresponds with that of the inner table.

A. 63.² A Skull-Cap, exhibiting extensive syphilitic ulceration of its outer table. The ulcers are distinct, large, and round.

Some of them, especially one on the frontal bone, show that they commenced in an annular form, an ulcerated groove forming round a portion of diseased bone, which portion was subsequently removed by the widening of the groove. The inner table is very vascular and less extensively ulcerated. Parts of the outer table are tuberculated.

- A. 64. A Skull-Cap, in which there are numerous oval, rough-edged apertures. Some extend through both tables; some are in the outer, others in the inner table alone. There has also been extensive destruction by ulceration of the frontal bone. The portions of skull between the apertures are healthy.

It is most probable that these changes were consequent on the growth of medullary tumours.

- A. 65. A Skull-Cap, exhibiting extensive superficial ulceration of the outer table.

- A. 66. Portion of a Skull, in which nearly the whole surface of the outer table is tuberculated and ulcerated. In the greater part of its extent the disease resembles that described in A. 34, 35, and other preceding specimens; but over the occipital bone the ulceration presents the more diffuse rough, jagged form which belongs to that occurring in acute inflammation and suppuration on the surface of a bone.

- A. 67. A Skull-Cap, in which a large portion of the outer table of the frontal bone is rough, grey, porous, and tuberculated, presenting the same change as has preceded the ulceration in many of the specimens just described. In this case ulceration has commenced in only two or three points about the middle of the diseased surface. The corresponding portion of the inner table is porous, as if it had been more than naturally vascular, but is not otherwise diseased.

- A. 68. A Skull-Cap, exhibiting ulceration of a small circumscribed

portion of the outer table of the frontal bone, with thickening of the inner table in the corresponding situation.

- A. 69. A Skull-Cap, with general thickening and induration of the frontal bone. Its outer table, like that of A. 67, is slightly tuberculated, and in one situation ulcerated; and all the adjacent parts appear to have been unnaturally vascular.
- A. 70. A Skull-Cap, exhibiting several distinct roundish ulcers, some of which have penetrated both its tables. They commenced in the outer table and present traces of the same annular primary form as those in A. 63.
- A. 71. A Skull-Cap, with superficial ulceration of both its tables.
- A. 72. A Skull-Cap, in which a small circumscribed ulcer of the outer table of the frontal bone has healed. There are general thickening and induration of the tables and obliteration of the diploe.
- A. 73. Portion of the Base of a Skull, exhibiting syphilitic ulceration of the palate, and the front of the alveolar process. There is also ulceration of the left malar bone, which presents the same characters as the ulceration in A. 34, and others of the preceding specimens.
- A. 74. A Skull-Cap, in which are many large ulcerated holes, occasioned by tumours originating in the dura mater. As in A. 64, the edges of the holes are abrupt, rough, and sharp, and the loss of substance in the diploe is a little greater than in either of the tables. Ulceration has also in one situation commenced on the exterior of the frontal bone. The grooves for the meningeal arteries, which were doubtless enlarged for the supply of blood to the tumours, are very deep, though the skull is not thickened nor otherwise diseased, except in the parts involved by the tumours.
- A. 75. The Base of a Skull, from a young subject, exhibiting ex-

tensive ulceration through a part of the parietal and temporal bones: the effect of strumous disease.

- A. 76. Portion of a Tibia exhibiting superficial ulceration, with a porous appearance of the surrounding bone: the result of disease like that shown in A. 50.
- A. 77. Portions of a Tibia and Fibula. A large portion of the shaft of each bone has been destroyed by ulceration, in consequence probably of some malignant disease; as in A. 74, the margins of the ulcer are abrupt, sharp, and excavated.
- A. 78. A Tibia and Fibula. A large portion of the shaft of the tibia, in its entire thickness, has been removed by malignant ulceration like that in the last-described specimen. The inferior portion of the tibia is united to the fibula by bone. The fibula is greatly thickened; and a fracture in the middle of its shaft has firmly united.
- A. 79. Portion of the Skull described in Nos. 248, 249, in the preceding Series, upon and within which medullary tumours grew.
- A. 80. Five Dorsal Vertebrae, exhibiting superficial ulceration on the anterior surfaces of their bodies: the ulceration was connected with psoas abscess.
- A. 81. Sections of the Skull of a Maniac, with irregular, rocky, and nodulated thickening and induration of the inner table.
- A. 82. A Skull-Cap, exhibiting extensive tuberculated syphilitic ulcerations of the parietal bones, with thickening and hardening of the inner table.
- A. 83. A Skull-Cap, exhibiting ulceration of its outer and inner tables in numerous minute holes, of which many are distinct in close set groups, but more have coalesced. There were fungous excrescences filling these minute excavations in the

bones, some of which were attached to the pericranium, and others to the dura mater; but it is uncertain whether they originated in the diploe or in the membranes investing the skull.

- A. 84. Portion of a Skull, with syphilitic ulceration of the frontal bone extending into the frontal sinuses and through the inner table of the skull.
- A. 85. Portion of a Skull-Cap, in which there has been extensive absorption. In the situation of the absorption of the inner table there were scrofulous tumours upon the dura mater. There were also sores in the scalp at the part where the outer table has been absorbed.
- A. 86. Portion of a Tibia with new bone formed round the middle of its shaft, and ulceration extending through part of the new bone to its surface: the effects of syphilis.
- A. 87. A Skull with the Lower Jaw. Many distinct portions of the cranium have been removed by ulceration like that consequent on the growth of tumours. In some situations, the absorption is confined to the diploe and outer table of the skull; in others, it extends through both tables. There has been disease in one of the articulations of the jaw, producing absorption of the articular cartilage, with a deposit of bone in the circumference, of the glenoid cavity. The corresponding condyle is in part removed by absorption; its surface is rough, except at one point, where it is highly polished, and has an ivory-like texture. In the ramus of the jaw on the same side, disease, apparently commencing in the diploe, has produced absorption of the bone at many separate and minute points.
- A. 88. A Skull-Cap, in which there is consolidation of the diploe, with increased hardness of the tables, and ulceration of the frontal and left parietal bones, consequent, probably, on the formation of matter within the diploe.

- A. 89. A Skull exhibiting the effects of syphilis. The palate, septum nasi, and the lateral boundaries of the nose, are destroyed by ulceration extending as high as the middle turbinated bone. The outer table of nearly all the upper part of the skull is tuberculated and very extensively ulcerated, and in several places the ulceration has penetrated the inner table.
- A. 90. The Skull-Cap of a young woman, in which, in the course of syphilis, the greater part of the outer table of the frontal portion of the frontal bone suffered necrosis, and was nearly separated from the adjacent bone. A deep groove has formed round the dead portion, and a large part of its under surface is separated. The inner table has not perished, but beneath the centre of the necrosed portion there are several irregular ulcerated openings in it. There are two small superficial ulcerations of the external table near the sagittal suture, on corresponding parts of the two parietal bones.
- A. 91. Sections of a Tibia, in which the osseous part of nearly all the cancellous tissue being absorbed, there is a wide cavity extending completely through the interior of the bone. The walls of the bone are a little thicker than natural: and their texture is light and porous; the cavity probably contained purulent matter.
- A. 92. Sections of a Femur in which there is an enlargement of the medullary cavity, with thinning of the walls, and general lightness and dryness of texture.
- A. 93. A Femur, exhibiting a slight enlargement of the lower part of its shaft. The exterior of the bone at this part is smooth and healthy, but in the corresponding situation in the interior there is a cavity from which the osseous part of the medullary tissue has been removed. The rest of the cancellous tissue is very delicate and light.
- A. 94. Part of a Tibia in which there has been Necrosis of a portion

of the shaft, and an abundant formation of new bone on all the adjacent part. The dead bone is completely separated, and lies loose in the cavity surrounded by the new bone, but is too large to be removed through any of the apertures, or *cloacæ*, in the new bone.

- A. 95. Sections of a Femur in which there has been Necrosis of nearly the whole length and thickness of the walls of the shaft. The dead bone is separated, and is completely enclosed in a case of new bone formed around it. There are several round and oval apertures leading through the new bone into the narrow space by which it is separated from the surface of the sequestrum.
- A. 96. Portion of a Femur, in which there has been Necrosis of the posterior wall of the lower part of the shaft. The dead bone was separated, but was held by a bridge of new bone formed across it. In the adjacent part of the shaft the walls are thickened, the cancellous tissue is nearly consolidated, and there is irregular ulceration above and upon the condyles.
- A. 97. A Tibia, in which there has been Necrosis of a portion of the wall and cancellous tissue of the upper half of the shaft. The new bone formed around the sequestrum is thick, hard, and very heavy, and there are many apertures leading through it into the cavity in which the sequestrum lies.
- A. 98. A Tibia and Fibula. There has been Necrosis of portions of the whole length of the walls of the tibia. The remaining walls with the new bone formed on them are thickened, enlarged, and very heavy. There is extensive ossification of the interosseous ligament.
- A. 99. Portion of a Femur in which there has been Necrosis of a part of the shaft. The sequestrum has been removed: the walls around the cavity in which it lay are thick, hard,

and heavy, though porous: and the adjacent cancellous tissue is nearly consolidated.

A. 100. A Tibia, in which there has been Necrosis of a portion of the shaft and of the cancellous tissue of its lower end. New bone has been formed abundantly about the seat of the necrosis. The lower articular surface of the tibia is nearly all destroyed by ulceration.

A. 101. A Femur, in which it is probable that there has been Necrosis of a portion of the inner wall and cancellous tissue of the lower part of the shaft. There is a large cavity in this part and by its side many smaller ones, around which the wall of the bone is thickened, porous, covered by new bone, and penetrated by an oval aperture like a *cloaca*.

A. 102. Sections of a Tibia in which there has been Necrosis of a portion of the cancellous texture near its head. A portion of the dead bone was probably removed through the smooth oval aperture in the adjacent thickened wall: the rest of it is not completely separated, but a deep groove bounds it.

A. 103. Section of a Tibia, exhibiting superficial Necrosis of its walls. A groove has formed around the dead bone, and there is a considerable deposit of new bone upon the surrounding living walls.

The other half of this bone is in the preceding Series, No. 188.

A. 104. A Skull-Cap, in which there has been Necrosis of a large portion of both tables of the frontal and right parietal bones. A groove, beginning in the outer table and gradually deepening, has been formed around the dead bone. Two applications of the trephine were made in the dead bone, with the expectation of finding matter beneath it.

The necrosis was produced by a burn.

A. 105. A Skull-Cap, exhibiting extensive Necrosis, which, apparently, succeeded syphilitic ulceration of the outer table

of the frontal bone. A groove has formed around the dead bone, and extends for some distance beneath its edges. There are cicatrices of old ulcers on the parietal bones : and the skull is heavy.

- A. 106. A Skull-Cap, exhibiting extensive Necrosis and Ulceration of the whole thickness of the parietal bones. A groove has been formed around the dead bone ; the increased vascularity of the adjoining margin of the living bone is shown by the numerous minute apertures in it. As is usual, no new bone is formed on the outer table around the sequestrum ; but a thin layer of new bone is formed on that portion of the inner table to the margin of which the groove of separation, commencing in the outer table and gradually deepening, has penetrated.
- A. 107. A Skull, with syphilitic Necrosis and Ulceration of a portion of the left parietal bone. The dead bone has been in part removed. The frontal bone is tuberculated as in syphilitic disease.
- A. 108. A Skull-Cap, exhibiting Necrosis of a portion of the outer table of the frontal bone, with thickening of the inner table to a corresponding extent. The dead bone is black : previous to its necrosis it appears to have been superficially ulcerated. There is a very shallow groove of separation around it. There is ulceration of the outer table of the frontal bone above the right orbit.
- A. 109. A Skull-Cap, in which there are several distinct syphilitic ulcers. The ulcers are nearly circular, and affect corresponding parts of both tables. Some of them present an annular form, a groove of ulceration extending round a central portion of diseased bone which is gradually removed as the groove widens towards the centre.
- A. 110. A Skull-Cap, in which there has been Necrosis of a portion

of the outer table of the frontal bone. A groove formed round the dead portion shows the progress of this part of the process for the separation of sequestra. There is also ulceration with irregular superficial necrosis of a portion of the left parietal bone.

A. 111. A Skull-Cap, exhibiting extensive Necrosis of the outer table, and, to a small extent, of the inner table, of the frontal bone. The necrosis, as in the similar specimens, A. 105 and 107, occurred in the course of syphilitic ulceration.

A. 112. A Skull, in which, in the course of syphilitic disease, there occurred necrosis of several large portions of the frontal and parietal bones. Many of the sequestra were completely separated, and the surface of the diploe and inner table exposed by their removal appears to have healed smoothly; but many other portions in which the necrosis extends through both tables of the skull, are only partially detached. The portions of the skull, which remain between those that have suffered necrosis, appear quite healthy: they were not even increased in vascularity.

A. 113. The lower end of a Tibia, including nearly the whole of its articular surface, which separated by exfoliation in a case of compound fracture.

Presented by R. S. Eyles, Esq.

A. 114. The corresponding ends of a Femur and a Tibia. In a heavy fall, the femur was fractured about three inches above the condyles. The fragments are firmly united; but the upper one lies in front of the lower, overlapping it. In consequence of the same injury, necrosis ensued in a small portion of the tibia, including part of its articular surface. The sequestrum, when the limb was amputated many years after the injury, was found loose, where it is now fixed, in a large cavity in the head of the tibia, which cavity opens

through the anterior wall by the side of the tubercle of the tibia, and more widely into the knee-joint. The articular surfaces of both femur and tibia are ulcerated; and in the inner condyle of the femur, there is a deep cavity like that of an abscess, corresponding with the cavity in which the sequestrum lies in the head of the tibia.

Presented by Thomas Sympson, Esq.

A. 115. Portion of a Spine, exhibiting Necrosis with abscess in the cancellous texture of the body of one of the vertebræ. There is a considerable deposit of new bone upon the vertebræ around the necrosed bone. Between two of the bodies, the fibro-cartilage has been removed, and they are united by bone.

A. 116. Two Femora from the same person. There has been necrosis in the lower part of the shaft of one of these bones. The dead bone has been completely separated, and new bone is formed around the cavity in which it lay. The femur which was thus diseased is shortened to the extent of about four inches; and there is a peculiar flattening of the condyles, the consequence, probably, of the knee-joint having been immoveably fixed in the position of extension.

A. 117. Portion of a Skull-Cap, exhibiting Necrosis of a previously diseased portion of its outer table.

From a patient who had a suppurating node upon the eranium in the situation and to the extent of the surface of bone which has perished.

A. 118. Sections of a Femur, in which a portion of the whole circumference of the inner layers of its wall, six inches long, has perished, and has been separated from the surrounding bone. New bone has been abundantly formed in and upon the outer layers of the wall, which separated from the sequestrum. There is not in this new bone any aperture, or cloaca, leading into the narrow space around the sequestrum. The tissue of the new bone is compact and heavy, and its surface hard and nearly smooth. It will be observed, also, that the medullary tissue is entire within the perished part

of the bone, although in this situation its tissue is nearly consolidated.

A. 119. Sections of a Tibia, which is presumed to have belonged to the same person as the femur last described, but from the opposite limb. It is diseased in exactly the same manner. A sequestrum of a large portion of the inner layers of its wall is completely enclosed within the thick and hard layer of new bone formed on and united with the remaining portions of the wall. The exterior of this new bone is even smoother than that last described, and there is no aperture leading through it to the cavity containing the sequestrum. The medullary tissue is entire; but partially consolidated.

A. 120. Sections of a Femur, exhibiting an increased thickness and density of the walls of the upper half of its shaft.

A. 121. Part of the Femur of a boy thirteen years old. Almost all the lower half of the shaft has perished in its whole thickness, and was in process of separation. Deep grooves have been formed between it and the adjacent living bone, on all parts of which new bone has been deposited.

The disease commenced after a blow on the knee, five weeks before the amputation of the limb.

A. 122. Part of a Tibia, two portions of which, each including both compact and cancellous tissue, have perished and were in process of separation by grooves being formed around them. Previous to the necrosis these portions had been irregularly ulcerated on their surfaces and consolidated in their internal structure by thickening and union of their lamellæ. All the parts of the bone intervening between the necrosed portions are thickened and indurated.

The patient was a man about fifty years old. The disease had made slow progress for many years before the removal of the limb.

A. 123. The Upper part of a Skull, exhibiting the effects of syphilitic ulceration and necrosis. A large portion of the frontal bone exfoliated long before the patient's death; and the

borders of the aperture, as well as the surrounding surface of the bone, are smoothly healed. A necrosed portion of the occipital bone was removed about a month before the patient's death : the aperture remains with ulcerated margins. There are also irregular superficial ulcerations on the external table of both the parietal bones ; and on many other parts of the skull are appearances of the bones having been unnaturally vascular.

- A. 124. Section of a Skull, exhibiting a small ivory-like Osseous Tumour with a narrow base, growing from the outer table of the frontal bone, just above the external angular process.

- A. 125. Section of a Clavicle, the scapular end of which is so enlarged after fracture that it has the appearance of a tumour.

- A. 126. The upper part of a Femur, with a bony process of a pyramidal form and about three inches in length, continued from the trochanter minor. To the extremity of this bony process the tendon of the psoas and iliacus muscles is attached.

- A. 127. The upper part of a Femur, exhibiting a bony process like that last described, which was connected with the trochanter minor by ligamentous substance.

- A. 128. A Humerus, with a broad based and sharp-edged growth of bone from the outer side of its shaft, close by the attachment of the deltoid muscle.

- A. 129. Sections of a Femur, and of a growth of bone from the outer side of its shaft. The growth has a broad base of attachment, and a smooth convex surface : one of its margins rises gently from the shaft, the other is sharp and overhanging. The section shows that the growth is almost entirely formed of compact tissue, and is wholly external to the wall of the femur.

- A. 130. Two thin irregular plates of Bone, which were found in the muscles close to the Femur last described.
- A. 131. A Humerus, with a nodulated Osseous Tumour growing from the front and upper part of its shaft. The tumour is much narrower at the point of its connexion with the shaft than elsewhere.
- A. 132. A Femur, from the whole circumference of which a Tumour of very large size has arisen. It extends from the condyles to near the upper end of the bone. The small portions of the femur remaining above and below the tumour are sound. The tumour consists of bone, of a light texture and grey colour, in thin lamellæ and very fine fibres, groups or masses of which being arranged in nearly parallel lines give the surface of the tumour a fibrous aspect, like pumice-stone. The tumour, probably, is of the Osteoid species, and was covered by some softer substance.
- A. 133. Sections of a Femur and an Os Innominatum, from which an Osseous Tumour of large size has arisen. The tumour has arisen principally from the Femur. It consists throughout of a very hard osseous substance with a compact surface and cancellous interior. It is divisible into lobes, and its surface is nodulated. There has been a fracture of the shaft of the femur, a little below the trochanter minor, which has firmly united. This fracture occurred before the growth of the tumour commenced. A much larger part of this tumour consisted principally of cartilaginous substance: a portion of it is preserved in the preceding series, No. 118.
- Cast of the limb from which the preceding specimen was taken; No. 3.
- A. 134. Portion of a Femur, with an Osseous Tumour growing with a long pedicle from the inner and front part of its shaft, just above the internal condyle and near the insertion of the triceps.

Presented by J. H. Martin, Esq.

- A. 135. Portion of a Humerus, on which there is a small Osseous growth from its lower and front part, a little above the inner condyle.
- A. 136. Portion of an Ulna on which a large Osseous Tumour has arisen from the whole of its articular surface between the olecranon and coronoid process. The tumour, compact on its surface and cancellous within, is lobed and irregularly nodulated.
- A. 137. Sections of a Femur, upon the shaft of which there is an Osseous growth, like A. 129, but with more cancellous texture in its interior.
- A. 138. A Femur, Tibia, and Fibula, from a child. They are all considerably curved from rickets, but have regained their natural firmness.
- A. 139. A Femur, Tibia, and Fibula, from an adult. They are considerably curved, but their texture is as hard and heavy as in health. The femur is curved in an arch with its convexity directed forwards; the middle of its shaft is flattened at the sides, and the linea aspera in the same part is very prominent, its edge forming a straight line representing the chord of the arc formed by the most curved part of the shaft. The tibia and fibula are curved inwards, and in the middle of their shafts present an antero-posterior flattening greater than the lateral flattening of the shaft of the femur.
- A. 140. Portion of the Femur of an adult very strongly curved in its upper third. The curved part of the shaft is so flattened that its anterior surface forms a narrow prominent ridge. A short sharp process of bone has grown from the trochanter minor.
- A. 141. The upper parts of two Femora. In the softened condition of the bone during rickets, the head of each femur

descended below the level of the upper end of the trochanter major. There is no shortening of the neck of the bone, but it is slender, and forms scarcely more than a right angle with the shaft.

A. 142. Sections of two Femora deformed like those last described.

A. 143. Section of the rickety Femur of an adult. The shaft is greatly curved and laterally flattened; and the section shows that, as usual, the walls of the bone are much thicker on the concave than on the convex side of the curve.

A. 144. The Fibula of an adult. Its shaft is curved and flattened. The principal curve is directed with its convexity inwards; but there is also a slight curvature forwards in the upper part of the shaft.

A. 145. A Female Pelvis, the cavity of which is altered in its form and direction, so that the symphysis pubis is directly opposite the left sacro-iliac symphysis. The change is presumed to be the effect of rickets. There was a slight lateral curve of the spine.

A. 146. Skeleton of a child, exhibiting the effects of rickets in several of its Bones. Nearly all the ribs are enlarged, thick, and round, and of a very soft spongy or porous texture, with little distinction between the walls and cancellous tissue. Similar alterations have taken place in the humerus, radius, and ulna of each arm; also in the clavicles, scapula, and pelvic bones: they are all thick, spongy, and light. The parietal bones, just above their connexion with the temporal bones, are also increased in thickness and very spongy. The left radius and ulna are curved, and the pelvis is narrowed and beaked by the approximation of the acetabula; but the other bones of the extremities have the natural shape.

A. 147. Spine, Pelvis, and lower limbs of a woman aged about thirty, deformed by rickets. The spine exhibits three lateral curvatures. The lumbar vertebræ, inclining strongly to the left, are also twisted on their axes so that the left transverse processes project forwards. The lower dorsal vertebræ, inclining to the right, compensate for the preceding changes by having their right transverse processes directed forwards. The upper dorsal and the cervical vertebræ tend to the right, and their transverse processes incline to the same directions as those of the lumbar, viz. the left forwards, and the right backwards. From the manner in which the weight of the trunk has been transmitted to the pelvis, the sacrum has become nearly horizontal. The cavity of the pelvis is capacious: the ilia are everted; and the angle of the symphysis pubis is rather more acute than is natural. The femora are short, and strongly curved, with their convexities directed forwards; and their lower articular ends appear very broad and flat. The tibiæ and fibulæ are also curved with their convexities directed forwards and inwards.

A. 148. The Skeleton of an adult woman, showing, in a remarkable degree, the deformities consequent on rickets. The dorsal region of the spine is strongly curved to the right side, and the lumbar region to the left; but the curve to the right predominates, so that the right ribs project an inch beyond the great trochanter, the chest thus overhanging the extremities. Together with the lateral curve of the spine, there is malposition of the bodies of the several vertebræ; they are all turned round, so that their front surfaces look outwards in the direction of the lateral curve in which they are included.

The right side of the chest is encroached upon by the dorsal curvature of the spine. The angles of the right ribs are very acute, their bodies strongly curved: the right intercostal spaces are very narrow. The angles of the left ribs are very obtuse, the ribs long and comparatively little curved, but directed downwards; so that the cartilages of the false ribs are nearly on a level with the crest of the left ilium,

and their bodies nearly in contact with the lower dorsal vertebræ at the beginning of the second, or left, curvature of the spine. The general position of the chest is thus very oblique; what should be its vertical axis is directed from above downwards, from before backwards, and from right to left.

The pelvis is light and all its bones are thin. It is obliquely placed; the crest of the left ilium being higher than that of the right, and its ala further back and more concave. The left side of the sacrum being also narrower than the right, and the symphysis pubis in the middle line, the left side of the pelvis and of its upper aperture are less capacious than the right. The rami of the ischia curve outwards; and the lower aperture of the pelvis, though misshapen, does not appear unnaturally small.

The scapulæ and clavicles are slender and well-formed. The humeri are short and proportionally thick; the upper halves of their shafts present each a slight double curvature. The radii and ulnæ are also short and slightly curved; in comparison with the humeri they are slender. The bones of the wrists and hands are well formed.

The femora are both curved and very short: they are of equal length; but the left is slender, while the right is of full thickness. In adaptation to the oblique position of the pelvis (the right acetabulum being nearly an inch lower than the left, and half an inch more forward), the right femur is much more strongly curved than the left; and the right is curved outwards, while the left is curved forwards. By this adaptation the obliquities in the upper part of the skeleton are nearly compensated; so that the knee-joints are at the same level; neither of them is advanced before the other; and, except that the articular surface of the right is more oblique than that of the left, they are symmetrical. The tibiæ and fibulæ are strongly but similarly curved forwards and inwards, so that the shafts of the tibiæ nearly touch. The lateral axes of the ankle-joints are directed from without inwards, and from above downwards; and the internal malleoli are far within the tarsi and on a level with the lower margins of the astragali. The feet

are in a corresponding degree splayed out, and their soles are nearly flat.

- A. 149. The Pelvis and Lower Extremities of a middle-aged woman who had suffered from rickets. The bones are all strong, thick, and heavy, and not much curved. They are all short, and the shaft of the left femur is two inches and a half shorter than that of the right. The necks of the femora are horizontal; and their lower articular ends, especially that of the left femur, appear, as they do also in many preceding specimens, broad and flat.
- A. 150. The Pelvis and Lower Extremities of a middle-aged woman who had suffered from Rickets. The cavity of the pelvis is contracted, especially on the left side, by the pressing in of the acetabulum; but the lower aperture of the pelvis is wide, the rami of the ischia being bent outwards and their tuberosities divergent. The necks of the femora are less oblique than usual; their shafts, as well as those of the tibiæ and fibulæ, are considerably curved forwards and inwards. The shafts of the tibiæ and fibulæ are broad and flat. The feet are so much turned inward that their great toes are in contact.
- A. 151. Pelvis and Lower Extremities of a young man. All the bones of the right side are atrophied. The several prominences on the right os innominatum are less marked, and its iliac fossa is more shallow, than the corresponding parts on the left side. The bones of the right thigh and leg are all shorter, less in circumference, softer, and lighter, than those of the left limb. From the hip-joint to the ankle there is a difference of nearly two inches in the length of the limbs. In compensation for this difference, the left foot is directed almost vertically, so that in the erect position of the body (in imitation of which the bones are arranged) the extremities of the toes of both limbs are at the same level. All the bones of the right foot are slender, small, and soft. The arch of the sole is much increased by the posterior part of the os calcis projecting more than usually downwards.

The shaft of the right femur is enlarged by external deposit of new bone. The muscles of the left limb were small and in a state of fatty degeneration.

- A. 152. Skeleton of an aged woman in which, with curvatures of the spine and an altered form of the chest, there is atrophy of the bones in the right lower limb. The spine has suffered three distinct curves, one to the left in the loins, a second to the right implicating the lower dorsal vertebræ, and the third to the left, extending from the middle of the back to the neck. The ribs are distorted in adaptation to the curvatures of the spine. The cavity of the chest is altered in its form and dimensions: its antero-posterior axis is direct, but its sides are flattened. The pelvis is well formed. The bones of the right lower limb are considerably smaller in all their dimensions than those of the opposite limb; in partial compensation for their shortness, the posterior part of the os calcis is elongated, and pointed almost straight downwards.
- A. 153. A Femur, on the middle of the shaft of which, on its outer and front aspect, is a large flat, broad-based and pointed osseous growth, like A. 129, and 137.
- A. 154. Bones of the Fore Leg of a horse, on which are numerous nodulated and rough growths of hard bone. They form a very large mass around the distal extremity of the metacarpal bone.
- A. 155. Sections of a Humerus, in which, though the shaft is scarcely enlarged, many parts of its cancellous tissue are consolidated. In the place of the medullary tube there remain only several small isolated cavities which were filled by marrow. Where the cancellous tissue is not quite consolidated, its osseous lamellæ and fibres are thickened, so that the spaces between them are much encroached upon.
- From the same patient as the femur, No. 5 in the preceding Series. He had long suffered from scrofulous inflammation of the elbow and ulcers of the upper arm after the amputation of the thigh; but they had healed many years before death.

- A. 156. Various Bones from Cows, on all of which there are external deposits of light, grey, porous, new bone. The deposits extend, in many cases, over the whole shaft. They are, for the most part, in thin layers, but are in some cases accumulated in thick ridges and knobs.

The cows from whom they were taken were fed in meadows near some arsenic-works; and it is presumed that these changes of the bones, which were observed in many of the cows, were the results of the impregnation of the air, or of their food, with arsenic.

Presented by Dr. Roupell.

- A. 157. A Scapula and part of a Humerus. The arm had been amputated long before death; and through disuse, the bones are atrophied, but the humerus in a much greater degree than the scapula. The shaft of the humerus has less than half its natural diameter and tapers to a slender cone, at the end of which is some rough new bone. The marks of the attachments of muscles on it are nearly obliterated, and its texture is light and dry. The head of the humerus is flattened and nearly all absorbed, and there is a corresponding diminution and change of form in the glenoid cavity.

- A. 158. An Os Innominatum and part of a Femur. After amputation through the middle of its shaft, the stump of the femur has been atrophied just as the humerus in the specimen last described: but its head and the acetabulum are unchanged.

- A. 159. The Stumps of a Tibia and Fibula after amputation just below the knee. Their medullary cavities are nearly closed by a layer of bone: and they are scarcely reduced in size; but their texture is very light and greasy.

After the amputation the stump healed; but it ulcerated afresh as often as the patient returned to his work: a second amputation was therefore performed, and the patient did well.

SERIES II.

DISEASES OF JOINTS.

DISEASES OF SYNOVIAL MEMBRANE.

Increased vascularity, 4, 45, 46; and Series I., 123.

Effusion of lymph and fluid, 3, 4, 14, 19, 45.

Effusion of lymph and fluid, 3, 4, 14, 19, 45.
Formation of false membranes and adhesions, (Soft Anchylosis), 7, 13, 24, 29,
55, 57.

Thickening, 14, 45, 12, 41, 24.

DISEASES OF ARTICULAR CARTILAGE.

Atrophy (thinning or wasting), 10, 39, 47, 50?

Fibrous degeneration, 8, 51, 53, 20, 22.

Fibrous degeneration, 8, 51, 53, 20, 22.
Ulceration of, and extending from, the free surface, 45, 46, 9, 31, 2.
 deep or attached surface, 6, 32, 37, 45, 46,
31, 4, 14, 17, and other specimens of diseased hip referred to below.

DISEASES OF THE ARTICULAR PORTIONS OF BONES.

Increased vascularity, 4, 9, 32, 37, 46.

Ulceration.

Superficial, 1, 4, 5, 14, 17, 19, 23, 30, 31, 35, 37, 44, 49, 58.

Decp, 23, 36, 15, 16, 18, 21, 48.

Decp, 23, 36, 15, 16, 18, 21, 48.
Separation of epiphyses and symphyses, 35, 59; and in Series I., 43, 44, 132.
Use of in ulcerations on the ulcerated surface of bone, 4, 5, 14, 19,

Formation of granulations on the ulcerated surface of bone, 4, 5, 14, 19, 31, 44, 58.

Union by bone, (Osseous Anchylosis), 29, 48, 55.

Enlargement and formation of new bone, 20, 28.

Induration and polishing, or eburnation, 8, 20, 22, 28, 36, 51.

DISEASES OF LIGAMENTS AND FIBROUS CAPSULES.

Atrophy; wasting and removal, 50, 52, 43, 53? 20? and? Series II., 59, 60.
 54, 55. See Series III., 24-31.

Elongation, 7, 40, 54, 55; and in Series III., 24, 31.

Thickening, 20, 22, 56.

Thickening, 20, 22, 56.
Ulceration, 17, 19, 49, and other specimens of diseased hip-joints.

PENDULOUS AND LOOSE GROWTHS IN JOINTS.

Fatty and fibrous (*Lipoma arborescens* of Müller), 20, 22, 28, 34, 56.

Cartilaginous and osseous, 22, 25, 26, 28, 34, 39, 56.

GOUTY AND OTHER UNORGANIZED DEPOSITS, 10, 11, 33.

DISLOCATIONS AFTER DISEASE (Spontaneous Dislocations), 7.

Partial, 7, 29, 55, 57.

Complete, 17, 44, 49, 54; and in Series III., 24, 31.

Diseases of the Temporo-Maxillary Articulation, 27, 42; and A. 87.

Shoulder-Joint, 22, 50.

Elbow, 12, 30, 39, 47; and in Series I., 56, 196, 197, 198, 207.

Wrist, 13, 23; and in Series I., 40, 73.

Hip, 14, 15, 16, 17, 18, 19, 21, 35, 44, 48, 49, 53, 59; and in Series I., 132, 221.

8, 20, 43, 52, 56, 54.

Knee, 3, 6, 7, 29, 31, 32, 36, 37, 40, 41, 45, 46, 55, 57; and in Series I., 43, 44, 51, 52, 70, 123, 173, 184, 201.

11, 28, 33, 34, 51, 53.

25, 26.

Ankle, 1, 2, 4, 5, 10; and in Series I., 133, 242, 243.

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1. SECTION of an Ankle-Joint, exhibiting the effects of inflammation. The articular cartilages are completely destroyed, and the bones are superficially ulcerated, and vascular. The other bones and the joints of the tarsus are healthy.
 2. An Astragalus, from the superior articular surface of which nearly all the articular cartilage has been removed; a small portion remains closely adherent to the bone, and very thin. The exposed surface of bone is healthy, except at one small portion, which is superficially ulcerated.
 3. A Knee-Joint, exhibiting the effects of inflammation. An abundant deposit of lymph has taken place from the internal surface of the synovial membrane, and thin flakes of it adhere to the articular cartilages.
 4. An Ankle-Joint, from which nearly all the articular cartilages have been removed: the small portions which remain are thinned, and their connexion with the bones is loosened. The bones are superficially ulcerated and very vascular. The

posterior surface, by which the astragalus articulated with the os calcis, is similarly diseased.

5. A similar specimen of ulceration of the cartilages and bones of the Ankle-Joint; but herein the exposed bones are covered thickly with lymph.
6. Sections of the Condyles of a Femur. The articular cartilage is thinned, and its connexion with the bone is so loosened that its separation was readily effected. Portions of the cartilage have been detached and turned downwards, to show that parts of the surface which was connected with the bone are unnaturally rough. The exposed surface of bone is very superficially ulcerated and thinly covered by granulations.
7. A Knee-Joint, in which ankylosis has been effected by the organization of lymph upon and between the opposite surfaces of the synovial membrane. A portion of the adherent synovial membrane is reflected from the front of the joint. The patella is firmly united to the external condyle of the femur, and the tibia and fibula have been drawn backwards under the femur, lengthening and giving a very oblique direction to the external lateral ligament. The bones are atrophied.
8. A section of the upper part of a Femur, from a man who had for four years suffered with rheumatic pains in and about the hip. A large portion of the articular cartilage has been completely removed from the middle of the head of the femur. The bone thus exposed is unnaturally hard; its surface is polished, and the morbid hardness extends for about a line in depth. Of the remaining cartilage, some is softened, thick, succulent, and nodulated on its surface, while that round the margin of the exposed bone is very thin; other parts, again, are marked with grooves, like wrinkles, radiating to the outer margin of the head; and others are converted into a fibrous tissue, which hangs in shreds from the surface of the bone.

New bone, in hard irregular nodules, is formed around the margin of the head, and on the neck of the femur.

From the man from whom the specimens of medullary disease of the ilium, in the preceding Series, Nos. 235 to 238, were taken.

9. A Patella, from which nearly all the articular cartilage has been removed by ulceration. The ulceration appears to have extended from the free surface towards the bone; the margins of the remaining peripheral part of the cartilage are either abrupt and smooth, as if cut with a curved chisel, or, in parts, thinly prolonged over the surface of the bone. All the cartilage that remains has retained its natural firm connexion with the bone. The part of the surface of the patella which is exposed by the ulceration of the cartilage is itself superficially ulcerated and covered by lymph.
10. An Os Calcis and Astragalus, (probably from a gouty person), the articular surfaces of which are uniformly covered by thin deposit of white earthy matter, consisting principally of carbonate of lime. The cartilages themselves are thin.
11. A Patella, the cartilage of which is similarly whitened by the deposit of earthy matter. It appears, also, thickened and nodular.

The two preceding specimens were taken from a man between forty and fifty years old. Nearly all the joints in the body were in a similar state: in some, a portion of the white substance was in a fluid state; and around some there was a similar deposit in the adjacent tissues. Case Book, Vol. i. p. 3, No. 10.

12. An Elbow-Joint, in which, probably by chronic inflammation, the synovial membrane is converted into a light brown substance, of a firm texture, about half or three quarters of an inch in thickness, with white lines running through it in various directions, and with a soft smooth surface. The morbid change terminates at the margins of the articular cartilages. Around the neck of the radius, the thickened synovial membrane forms a fold projecting into the cavity of the joint. The cartilages and bones of the joint appear healthy.

The patient was a man sixty years old, and the disease had existed fifteen

months. It originated in a blow, after which the joint remained very stiff, but without pain and with little swelling, for twelve months. Numerous small swellings, like enlarged lymphatic glands, then formed around the joint; they inflamed, and when punctured discharged a glairy fluid. The disease outside the joint increasing, the limb was amputated. On examination the swellings were found to have no connexion with the interior of the joint. The difficulty of motion in the joint, especially the hindrance to the rotation of the radius, appeared to depend on the projecting folds of the synovial membrane. Case Book, Vol. i. p. 4, No. 11.

13. The lower ends of a Radius and Ulna, with the bones of the Carpus and Metacarpus, exhibiting extensive disease in and about the carpus, with necrosis of the lower end of the radius. A considerable portion of the end of the radius, already deeply ulcerated, died and was in process of exfoliation. The cartilage between the ulna and the carpus is completely destroyed. The ulna and the bones of the carpus have had their cartilaginous surfaces destroyed by ulceration, and ankylosis has taken place between them, both by adhesion of their surfaces and by thickening and consolidation of the surrounding parts.
14. A Hip-Joint, exhibiting the effects of inflammation. The cartilage has been completely separated both from the head of the femur and from the acetabulum, and some shreds and ulcerated remnants of it are loose in the cavity of the joint. The ligamentum teres is destroyed. The exposed bones are superficially but smoothly ulcerated. The cavity of the acetabulum is enlarged by the ulceration of its walls. The capsule is thickened, and its synovial surface appears swollen, soft, and thinly covered by lymph.

The patient was a sailor, forty years old. He awoke one night with intense pain in the hip, which lasted some hours, and then in a less degree continued, till, in a fall, he bruised his hip. After this the pain again became exceedingly severe; and this continued, without remission, till he died. Case Book, Vol. i. p. 5, No. 12.
15. Portion of a Femur, of which nearly the whole head has been destroyed by ulceration. The uneven rough surface of what remains is covered by shreds of false membrane, by which, probably, it was fixed in the acetabulum.
16. Portion of a Child's Femur, of which the greater part of the

head has been destroyed by ulceration. A portion of the head remains, but it is completely detached and is ulcerated on every surface.

17. A Hip-Joint, from an adult, exhibiting the effects of inflammation. The cartilage covering the head of the femur is completely destroyed by ulceration, and the exposed surface of bone is covered by lymph. The ligamentum teres, also, is destroyed. The head of the femur is dislocated from the acetabulum, and is drawn upwards and backwards upon the dorsum of the ilium, where it rests surrounded by a capsule formed, probably, in part by the diseased old capsule, and in part by the surrounding tissues thickened and consolidated.
18. A Hip-Joint from a child, in which, by a further progress of the inflammation shown in the preceding specimens, both the acetabulum and the whole of the head and neck of the femur have been destroyed by ulceration.
19. A Hip-Joint, in which the articular cartilage covering the acetabulum and head of the bone is completely destroyed. The exposed surfaces of bone are ulcerated, and the acetabulum is thereby enlarged. The ligamentum teres is also in great part destroyed; but shreds of it remain, and retain the connexion of the bones. The capsule is thickened, and its inner surface is thinly lined by lymph.
20. A Hip-Joint. In consequence, probably, of rheumatic disease, the acetabulum is greatly enlarged and has assumed an oval form. The head of the femur is enlarged and adapted in its form to the acetabulum. All the articular cartilage is removed, and the surfaces of the bones are smooth, hard, and polished. The capsule of the joint is thickened, and upon its internal surface around the neck of the femur there are several groups of slender pendulous growths.
21. A Hip-Joint, in which the head and neck of the femur have been completely absorbed. The margins of the acetabulum,

also, have been absorbed, and its cavity has been filled up ; so that in its place there is only an oval, flat, rough surface, with which the corresponding surface of the femur remaining between the trochanters was in contact. The two surfaces were exactly adapted to each other, and covered by a substance like cartilage, so as to form a sort of joint, around which a thick capsule extended.

These changes may be regarded as the results of healing after destructive ulceration such as is shown in No. 15, 16, and other preceding specimens of disease of the hip-joint.

22. A Shoulder-Joint, in which, in the same manner as in Nos. 8 and 20, there has been degeneration and removal of the articular cartilage, with hardening of the subjacent bone. The capsule is generally thickened, and there are numerous groups of small pendulous processes of fat, and two larger masses of hard nodulated bone, attached to its internal surface.
23. Bones of the Wrist, exhibiting the effects of inflammation in the whole of the carpal and metacarpal joints. The articular surfaces of the several bones are extensively ulcerated,—some superficially, others deeply,—and there is a very abundant formation of new bone around the ulcerated parts.
24. A Knee-Joint, exhibiting a peculiar change of structure in the synovial membrane. The capsule has been extensively opened and raised for the purpose of exposing the cavity of the joint. The internal surface of the synovial membrane is granulated. The membrane has everywhere become very thick, and especially so at the upper and front part of the joint, where its thickness is not less than two inches, and its substance is so firm as to be almost of a gristly texture. The part of the membrane opposed to the articular cartilage of the femur was adherent to it. The whole of the soft parts exterior to the diseased synovial membrane have been carefully removed, so that nothing else is left around the joint.
25. A flattened oval mass of a substance like cartilage, smooth on one surface, nodulated on the other, which was removed

from a Knee-Joint in which it was loose. The central part of the mass appears to be osseous.

26. A similar, but rather smaller specimen, in which, also, specks of osseous substance are formed at the centre.
27. The Base of a Skull, exhibiting disease in the right articulation of the Lower Jaw. Ulceration, commencing in the surface of the glenoid cavity, has extended both widely and deeply in the adjacent bone, and new bone is formed around the ulcerated surface.
28. A Knee-Joint, exhibiting numerous growths on its internal surface. The growths are of various sizes, nodulated, grouped, and attached, for the most part, by narrow pedicles. They are most abundant about the margins of the articular surfaces of the bones. Some of them are cartilaginous, others osseous; and there are some which consist of fat covered by a thin membrane, like a reflection of the synovial membrane. The heads of the bones are enlarged, their articular cartilages are removed, and the exposed surfaces are hard and polished.

The disease had existed for more than two years with signs of chronic inflammation of the synovial membrane. There were four ounces of fluid "like train oil" in the cavity of the joint. The patient recovered completely after the amputation of the limb.

Presented by Thomas Fereday, Esq.

29. Section of a Knee-Joint, the articular surfaces of which are united by false membrane and bone. The patella is united to the inferior part of the outer condyle of the femur, and their respective cancellous tissues have coalesced. The tibia and fibula are drawn backwards under the femur. The external lateral ligament is changed in its direction and elongated.

The other section of the joint is preserved in the next Sub-series, B. 41.

30. Bones of an Elbow-Joint, exhibiting the effects of inflammation which, probably, commenced in the joint. The texture of the bones has become porous and spongy: their articular surfaces are ulcerated; and upon the external surface of each bone,

there is an irregular deposit of new bone in ridges and sharp processes.

31. Bones of a Knee-Joint, exhibiting the effects of inflammation. Parts of the free surface of the cartilage upon each bone have been absorbed. There has also been a more extensive absorption of the deep or attached surface of the cartilage, so that its connexion with the bone was loosened, and it was readily separable from it. Where the absorption of the deep surface of the cartilage has taken place, granulations have arisen from the bone.

In the recent state the bones were seen to be exceedingly vascular; and it was presumed that inflammation of their articular surfaces preceded the other changes in the joint.

32. The articular portions of a Femur and a Patella, exhibiting partial absorption of the articular cartilages, and loosening of their connexion with the bones. The cartilage upon the patella has been absorbed in its centre, and it was readily separable from the bone, except at its border, where it still maintains its natural firmness of connexion. Upon the posterior part of the condyles of the femur, the whole thickness of the cartilage is absorbed: the exposed surface of the bone is rough and very vascular.
33. The articular portions of two Femora and two Patellæ from the same individual. A deposit of white earthy matter, the effect of gout, has taken place upon the surface of their articular cartilages.
34. Portion of a Knee-Joint, with various growths from the internal surface of its synovial membrane. Most of these growths consist of fringes of slender and leaf-like processes of a soft fibrous structure; others are firmer and approach to cartilage in their character; and one is a flattened, nodulated growth of bone, covered by a thin membrane. The other structures of the joint appear healthy.
35. Portion of a Femur from a young subject. Disease com-

mencing in the hip-joint, has in its progress occasioned a separation of the head of the femur in the line in which, as an epiphysis, it was connected with the neck. There is also ulceration of a part of the surface of the head and neck of the bone.

36. Bones of a Knee-Joint, exhibiting the effects of Inflammation, which it was presumed commenced in the synovial membrane. The greater part of the articular surfaces of the tibia and femur is deeply ulcerated; the portions of them which remain, are hardened and polished like ivory. Upon the exterior of each bone, contiguous to its articular surface, there is an irregular deposit of osseous substance.
37. Section of a Femur, exhibiting the effects of inflammation of the cancellous texture and articular surface of one of its condyles. The increased vascularity of the bone is evinced by the degree in which its vessels have received injection. The connexion of the articular cartilage with the bone was loosened so that it was readily separated.
38. The Bones of a Great Toe, in which, probably in consequence of gout, the articular surfaces of the metatarsal bone and first phalanx are in part destroyed, and there is an abundant deposit of hard nodulated new bone around their borders.
39. Portion of an Elbow-Joint, in which there are several cartilaginous growths from the internal surface of the capsule, immediately above the olecranon. Two of these are closely attached to the capsule. A third is attached to it by a round and thin pedicle apparently formed by the synovial membrane. One portion of cartilaginous substance, which was found loose in the joint, is at the bottom of the bottle.
40. A Knee-Joint from a young subject, amputated on account of disease of the synovial membrane (see No. 41). The articular cartilages and bones are unaltered. The lateral ligaments are apparently unaltered in structure, but are considerably elongated, and have permitted displacement of the articular surfaces.

41. Portion of the Synovial Membrane, with the Patella, from the Knee-Joint last described. The synovial membrane is considerably thickened, its internal surface is granulated, and portions of it in irregular pulpy masses overlay, so that they nearly conceal, the cartilaginous surface of the patella.
42. Portion of the Base of a Skull, exhibiting partial absorption of the surface of the glenoid cavity, the effect of disease in the articulation of the lower jaw.
43. Two Hip-Joints from the same person. In each joint the ligamentum teres is completely wanting. The capsule of each is perfect and exhibited no appearance of disease. In the usual situation of the attachment of the ligamentum teres there is a deep depression in the head of the femur, and just above this, the cartilage of each femur is slightly absorbed.
44. The Hip-Joint of a young subject. Dislocation of the femur occurred after disease of long standing. The head of the femur lies upon the ischium, close to the notch and a little above the tuberosity, in contact with the great ischiatic nerve, under which bristles are passed. Immediately below the head of the bone is the obturator externus muscle. The articular cartilage of the femur has been completely absorbed; the surface of the bone is ulcerated and covered by lymph and granulations. No remains of the capsule are apparent. The shaft of the femur is fractured immediately below the trochanter.
- The fracture of the Femur occurred during life, and was probably the consequence of severe convulsions of the thigh which had existed, together with symptoms of chorea, through the week previous to death. The periosteum was inflamed, and separated from the bone some inches below the fracture.
45. A Knee-Joint, exhibiting the effects of acute inflammation affecting chiefly the articular cartilages. The synovial membrane is slightly thickened and increased in vascularity. Upon the patella, as well as upon the outer condyle of the femur and the head of the tibia, the free surface of the articular cartilage is extensively absorbed. There has also been some absorption of its deep or attached surface, so that its connexion with the

bone is loosened. The exposed surface of the bones is very vascular.

The patient was a boy aged fifteen. The disease had been of only two months duration; it commenced, apparently, in the cellular tissue of the ham, and thence extended into the joint. During the last fortnight of its progress the pain was extremely severe. The limb was amputated and the patient recovered.

46. Bones of the Knee and Ankle-Joints of a boy, in whom ulceration, connected with necrosis, extended through both the upper and lower articular surfaces of the tibia. The articular cartilages of the femur and patella are diseased in almost exactly the same manner as those in the preceding specimen are. The cartilage of the upper surface of the astragalus is almost wholly removed, and the exposed bone is covered with lymph.

From the same patient as No. 195 in the preceding Series.

47. Parts of the Ulnæ of an old woman. An exactly similar portion of the articular cartilage of each ulna has been absorbed; and the space thus left on the surface of each is filled by a vascular growth like a process of the synovial membrane.

The specimens are represented in the *Medico-Chirurgical Transactions*, Vol. xxv., Pl. ii., f. 1, 2; where they are also described by Mr. Paget, together with Nos. 33, 43, 52, 53, in this Series; Nos. 253, 254, in Series I.; and other specimens of symmetrical diseases.

48. Bones of the Hip-Joint, from a boy eighteen years old, in whom disease of the hip had existed for twelve years before death. Part of the head and neck of the femur has been removed by ulceration. There has been also ulceration of the wall of the acetabulum, widening its cavity, and at one point penetrating into the pelvis. New bone has been formed in the bottom of the acetabulum, and was intimately united with the rough ulcerated surface of the femur.

The disease of the hip was not in progress when the patient died with phthisis.

49. A Hip-Joint, in which acute disease had been several months in progress; from a boy ten years old. The head of the femur has been dislocated from the acetabulum to the dorsum of the ilium. Ulceration of the capsule had taken place, and the head of the bone was contained in a cavity formed by the re-

mains of the capsule and by the surrounding muscles. Within this cavity, as well as in the acetabulum, was a mixture of a large quantity of pus and tuberculous matter. The section of the head of the femur shows tuberculous matter deposited in its cancellous texture. There is also a collection of tuberculous matter in the walls of the acetabulum communicating with its cavity and with the cavity of the pelvis. An abscess had formed between the periosteum and the shaft of the bone just below the trochanter. The ischiatic nerve is seen upon the tuberosity of the ischium, near the dislocated head of the bone.

50. A Shoulder-Joint, in which there is partial absorption of the articular cartilage upon the head of the humerus and glenoid cavity. The tendon of the biceps is continued on the outside of the capsule of the joint, to the upper edge of the glenoid cavity. There is also a distinct slip of this tendon adherent to the lower part of the bicipital groove in the humerus.

It is not known whether this condition of the tendon of the biceps were the result of injury or disease, or a congenital defect. The other shoulder-joint presented a similar arrangement.

51. A Patella, in which there is softening, with fibrous degeneration and absorption, of the articular cartilage. The disease affects only half the cartilage. At the borders of the diseased part there are cracks extending in various directions through the whole thickness of the cartilage, and some of its substance between the cracks is converted into close-set tufts of fine filaments, which float out from the surface of the bone, and are about twice as long as the healthy cartilage is thick. In the centre of the diseased spot, where the morbid change has made most progress, the cartilage has been wholly removed, and the exposed surface of the patella is hard and nodulated.

52. The Bones of two Hip-Joints from the same person. In each joint are exhibited exactly the same morbid changes. Nothing remains of either ligamentum teres, except a few shreds of fibrous tissue attached to the head of each femur. Close by the insertion of this ligament a similar small portion of each of the articular cartilages has been removed by ulceration; and on the anterior surface of the neck of each femur there is an irregular

aperture in its synovial and fibrous covering, beneath which the surface of the bone is hard and nodulated.

53. The Bones and Ligaments of a Knee-Joint. The anterior crucial ligament is wanting, and small portions of the articular cartilages of the femur and tibia have been absorbed, apparently after fibrous degeneration. The opposite joint was similarly and symmetrically diseased.

54. A Hip-Joint, exhibiting elongation of the capsule and of the ligamentum teres. The ligamentum teres has separated through its whole length into three cords. The internal surface of the capsule is beset by small pedunculated membranous growths. The elongation of the capsule has allowed the head of the femur to pass to a considerable distance from the acetabulum, which is contracted to a small triangular cavity.

Presented by W. J. Ward, Esq. An engraving of the specimen is published, with a paper by Mr. Stanley, "On Dislocations, accompanied by Elongation of the Ligaments," in the *Medico-Chirurgical Transactions*, Vol. xxiv., Pl. iv. fig. 2, London, 1841. See also, for similar specimens, Nos. 24, 31. in the next Series.

55. A Knee-Joint, in which during the course of long continued inflammation, the Tibia has been dislocated backwards and outwards. Firm ankylosis by fibrous tissue has taken place between the inner half of the upper surface of the tibia and the condyles of the femur. The patella is ankylosed to the outer surface and lower margin of the outer condyle of the femur. The external and internal lateral ligaments, retaining their normal attachments, are much elongated.

56. A Hip-Joint, in which there are portions of hard cartilaginous and osseous substance. They are fixed to the inner surface of the capsule, and to the anterior part of the neck of the femur, by adhesions of tough fibrous tissue; their contiguous surfaces are exactly fitted to one another, and they form a nodulated, oval mass, nearly three inches long, one surface of which rested upon and was adapted to the neck of the femur. The capsule is thickened, and its interior is beset with slender pedunculated processes.

From a woman upwards of seventy years old. The mass formed a distinct tumour projecting in the groin.

57. A Knee-Joint, in which, in the course of inflammation of long standing, the Tibia and Fibula have been dislocated backwards, so that the head of the tibia is fixed to the posterior surface of the condyles of the femur. The patella is fixed by osseous ankylosis to the outer condyle. Both the lateral ligaments and the ligamentum patellæ are much elongated, but their tissue appears healthy.
58. A Hip-Joint, from a young woman, in which the articular cartilages of the femur and acetabulum have been removed by ulceration, and the exposed surfaces of the bones are covered by soft granulations and flakes of lymph. The capsular ligament is thickened, and the head of the femur and the acetabulum appear enlarged. At the anterior and inner part of the capsule, there is a large oval opening with smooth defined margins. This opening was immediately beneath the tendon of the psoas and iliacus muscles, in the situation at which the bursa naturally existing beneath that tendon sometimes communicates with the cavity of the hip-joint.

A large psoas abscess had long existed in this patient: and it seemed probable, that the pus having passed under the tendon of the psoas and iliacus muscles, and through the aperture of communication between the bursa and the joint, had excited acute inflammation of the latter.

59. The Hip-Joint of a child, in which the ligamentum teres, the cartilage of the acetabulum, and a part of the substance uniting the three component bones of the os innominatum, have been destroyed by ulceration. A portion of glass is passed through the floor of the acetabulum into the pelvis, where a collection of matter was formed beneath the obdurator muscle and fascia. The acetabulum and the capsular ligament, a part of which is preserved, are lined by lymph, which was mingled with pus; but, with the exception of a slight superficial ulceration of its articular cartilage, the head of the femur is healthy.

The child, seven years old, had suffered for six months with pain, and obscure signs of disease, in or about the hip-joint, when she was seized suddenly with the most acute pain in the joint, which after some time remitted but returned at intervals. Two months afterwards she died.

Presented by R. W. Tamplin, Esq.

SUB-SERIES B.

DISEASES OF JOINTS.

The Specimens not contained in Bottles.

DISEASES OF THE ARTICULAR PORTIONS OF BONES.

Enlargement and formation of new bone, B. 7, 9, 11, 17, 35, 40, 42, 43.

Ulceration.

Such as accompanies suppuration in the joints.

Superficial, B. 4, 5, 6, 15, 23, 25, 33, 41, 48? 49.

Deep, B. 1, 2, 3, 8, 10, 14, 18, 19, 22, 23, 26, 27, 28, 31, 45, 46, 50, 53, 54.

Such as accompanies rheumatic or gouty disease, B. 7, 9, 11, 12, 13, 16, 17, 20, 32, 40, 42, 43, 47, 51.

Necrosis, B. 10, 25, 27, 54; and Sub-series A. 114, 121,

Induration and polishing (eburnation) of the articular surfaces, B. 7, 11, 12, 16, 17, 20, 32, 37, 42, 43, 47, 53.

Union by bone (Ossous Anchylosis), B. 1, 2, 4, 5, 6, 22, 24, 26, 29, 30, 33, 34, 36, 39, 41, 49, 50, 55, 56, 57.

DISLOCATIONS AFTER DISEASE.

Partial, B. 1, 4, 5, 15, 22, 26, 32, 33, 41, 44, 47, 52.

Complete, B. 48.

Diseases of the Shoulder-Joint, B. 31, 50.

B. 32, 44, 52?

Elbow, B. 29, 30, 39, 53.

Wrist and hand, 33, 34, 36, 37.

Sacro-iliac, 54, 55, 56, 57.

Hip, B. 1, 2, 3, 4, 5, 6, 8, 10, 14, 15, 18, 19, 38, 45, 46.

B. 7, 9, 11, 12, 13, 16, 17, 20, 40, 42, 43, 51.

Knee, B. 22 to 28, 41, 49.

B. 47.

Joints of the tarsus and toes, 35.

B. 1. The bones of a Hip-Joint, in which the head of the femur, after extensive ulceration, has been dislocated to the upper margin of the acetabulum, and is there fixed. The aceta-

bulum is filled by bone, which has coalesced with a large growth of new bone from the lower surface of the neck of the femur.

- B. 2. Sections of the bones of a Hip-Joint, exhibiting complete osseous union of the head of the femur with the acetabulum. Their walls and cancellous tissues have coalesced, and are uninterruptedly continuous. The femur is fixed in extreme flexion. There are traces of healed ulceration through the bottom of the acetabulum into the pelvis.
- B. 3. The bones of a Hip-Joint, in which the head and neck of the femur and the brim of the acetabulum have been destroyed by ulceration. The ulcerated surfaces have healed. The femur was not dislocated: the remains of its neck appear to have rested in the acetabulum, and the trochanter minor in the foramen ovale. The bones are very slender, but their tissue appears healthy.
- B. 4. The bones of a Hip-Joint, in which the head of the femur, after superficial ulceration, has been dislocated on the posterior border of the acetabulum, and is there firmly united by bone. New bone has also been formed on all the adjacent parts of the os innominatum. The acetabulum was deeply ulcerated.
- B. 5. The bones of a Hip-Joint, in which the head of the femur rests partly in the acetabulum and partly upon the ilium, and in this situation has become firmly and smoothly united by bone. In this, as in the preceding specimen, all the bones are of natural weight and hardness.
- B. 6. The bones of a Hip-Joint, exhibiting an osseous ankylosis of the head of the femur to the ilium, similar to that shown in the preceding specimen. A thin band of bone, half an inch wide, is extended between the trochanter major and the upper part of the tuberosity of the ischium.
- B. 7. The bones of a Hip-Joint. The depth of the acetabulum is

increased by absorption of its base, and by ossification of the cotyloid ligament. The articular surface of the femur is in part removed by absorption; and there is a rough, nodulated formation of new bone around the margin of the head and on the neck of the femur. The surfaces of the acetabulum and of the head of the femur on which absorption has taken place, are rough, hard, and deeply and irregularly perforated, like worm-eaten wood: parts of the remains of their articular surfaces are hardened and polished.

- B. 8. The bones of a Hip-Joint, in which there has been ulceration of the acetabulum and of the head and part of the neck of the femur. The ulcerated surfaces appear to have healed, and were closely adapted.

Presented by Richard Partridge, Esq.

- B. 9. The bones of a Hip-Joint, in which there has been ulceration of the acetabulum and of the head and neck of the femur. Osseous deposit has taken place around the neck of the femur, and in thick nodules upon the posterior and inferior margins of the acetabulum. The remains of the head of the femur were adapted to the surface of new bone formed on the acetabulum; and the summit of a very large mass of new bone growing up from the upper part of the neck rested on the surface of the new bone formed behind the posterior margin of the acetabulum.
- B. 10. The bones of a Hip-Joint, in which there has been extensive ulceration of the acetabulum, and of the head, neck, and parts of the trochanters of the femur. There is necrosis of the tuberosity of the ischium and of a portion of the great trochanter: both the dead pieces of bone are surrounded by grooves of separation. An ulcerated passage extends from the acetabulum through the ischium, just above its spine; and new bone has been formed upon the shaft of the femur and other parts adjacent to the seats of the necrosis and ulceration.
- B. 11. Sections of the bones of a Hip-Joint, in which portions of

the articular surfaces of the acetabulum and of the head of the femur have become finely polished and of an ivory-like texture. The polished portions are deeply penetrated by numerous minute irregular canals; and there is abundant formation of new bone round the margin of the head and on the neck of the femur, as well as about the brim of the acetabulum.

- B. 12. Sections of the bones of a Hip-Joint, in which there has been absorption of the upper part of the head of the femur. The surface of the part thus absorbed, as well as that of the acetabulum with which it was in contact, and on which it probably moved freely, are polished, ivory-like, and perforated like those in the preceding specimen.
- B. 13. Portion of a Femur, exhibiting absorption of the upper part of its head, with a considerable formation of new bone around the margin of the head and on the neck. The bone is very light.
- B. 14. The bones of the Hip-Joint of a young person. The brim of the acetabulum, and the head, neck, and part of the shaft of the femur, have been completely removed by ulceration. There are also large ulcerated apertures in the upper and anterior walls of the acetabulum.
- B. 15. The bones of a Hip-Joint, in which there has been superficial ulceration of the acetabulum and of the head of the femur. The head of the femur was dislocated, and rested on the surface of some new bone formed on the posterior margin of the acetabulum.
- B. 16. Sections of the bones of a Hip-Joint, in which the depth of the acetabulum is increased by the deposit of osseous matter around its margin. Its articular surface, and that of the head of the femur, have been absorbed, and the surfaces exposed are hard, perforated, and in a few parts polished. A formation of new bone round the margin of the head of

the femur corresponds with that on the margin of the acetabulum.

- B. 17. Portion of a Femur, exhibiting absorption, hardening, and polishing of the upper and anterior part, with osseous deposit around the margin, of its head.
- B. 18. An Os Innominatum, in which ulceration has removed the whole surface of the acetabulum, and has formed a large aperture of communication between its cavity and the interior of the pelvis.
- B. 19. Portion of a Femur, of which the head and neck have been removed by ulceration. New bone is formed, in a saccular shape, in front of the trochanter minor.
- B. 20. Portion of a Femur, in which the upper part of the head has been absorbed, flattened, and increased in width. Part of the surface absorbed is hard, polished, and perforated: new bone is formed on other parts.
- B. 21. Portion of a Femur, in which the neck of the bone appears to have yielded while in a softened condition, so as to permit the head to be carried backwards nearly into contact with the posterior part of the trochanter major. The bone is light, and parts of it are brittle.
- B. 22. The bones of a Knee-Joint, in which the patella is united by bone to the space between the condyles of the femur, and the condyles are similarly united to the articular surfaces of the tibia. The disease, probably, commenced in the head of the tibia, this part of the bone being altered in structure, and deeply ulcerated. The tibia is drawn under the femur, and the joint fixed in the half-bent position.
- B. 23. The bones of a Knee-Joint, exhibiting ulceration of the articular surfaces of the femur and tibia.
- B. 24. The bones of a Knee-Joint, in which the inner condyle of

the femur is united by bone to the inner border of the articular surface of the tibia. The rest of both the articular surfaces appears healthy. The bones are light.

- B. 25. The bones of the Knee-Joint of a young person, in which there is necrosis of part of the shaft of the femur, with ulceration of the cancellous texture extending through the epiphysis to the articular surface.
- B. 26. The bones of a Knee-Joint, light, spongy, and partially ulcerated. What remains of the patella is united by bone to the femur, and the condyles of the femur are similarly ankylosed to the head of the tibia.
- B. 27. The lower end of a Femur, exhibiting ulceration of its wall, just above the condyles, with thickening of the surrounding bone, and superficial ulceration of the articular surface.
- B. 28. The bones of a Knee-Joint, exhibiting superficial ulceration of the articular surfaces of the femur, and very deep ulceration of the head of the tibia. The bones are light, dry, and brittle.
- B. 29. The bones of an Elbow-Joint, in which all the articular surfaces are united and surrounded by bone. The joint is in the half-bent position.
- B. 30. Sections of the bones of an Elbow-Joint, in which there is complete osseous ankylosis between the humerus and ulna.
- B. 31. The bones of a Shoulder-Joint, in which the glenoid cavity and head of the humerus have been entirely removed by ulceration. The ulcerated surfaces have smoothly healed; but, probably, there was no motion at the joint.
- B. 32. The bones of both the Shoulder-Joints of an adult. In each joint there has been ulceration, or such absorption as occurs in chronic rheumatism, of the articular surfaces of the head of the humerus and the glenoid cavity. The heads of the

humeri are flattened and enlarged by growths of bone around their borders ; and the glenoid cavities, enlarged in a corresponding degree and deepened, extend backwards and inwards to the bases of the spines of the scapulæ. The articular surfaces thus enlarged are mutually adapted, and are hardened, perforated, and in some parts polished and ivory-like. The changes of structure are symmetrical, except in that the articular surfaces of the right shoulder-joint are more extensively polished than those of the left.

- B. 33. The bones of a Finger. There is osseous ankylosis, with slight lateral displacement, of the bones of the first and second phalanges.
- B. 34. The bones of a Carpus, with complete osseous union of their several articular surfaces.
- B. 35. The bones of two Toes, exhibiting ulceration of their articular surfaces, and growths of bone around and near their articular borders ; the effects, probably, of gout.
- B. 36. The bones of a Carpus, with two of the Metacarpal Bones. There is osseous ankylosis of the metacarpal bones with the carpus, and of the several carpal bones with each other. A fracture of one of the metacarpal bones, which has been united, but with much displacement, probably preceded the disease of the articular surfaces.
- B. 37. Portions of a Radius and Ulna. There has been ulceration of the surfaces by which they were articulated. The ulcerated surfaces, hardened and polished, have become remarkably grooved and adapted to each other, so that the new joint which they form may have permitted a very free movement of the radius upon the ulna. The surface by which the ulna articulated with the carpus is similarly polished : the carpal surface of the radius is healthy.
- B. 38. The Bones of a Hip-Joint, in which there have been superficial ulceration of the head of the femur, and ulceration of the acetabulum penetrating to the cavity of the pelvis.

B. 39. The bones of an Elbow-Joint, exhibiting a complete and smooth osseous ankylosis of their articular surfaces. The bones are sound in texture.

B. 40. Portion of a Femur, the head of which is deformed by the flattening of its upper half and the enlargement of its border: the neck, also, is shortened.

B. 41. Section of the bones of a Knee-Joint, exhibiting osseous ankylosis of their articular surfaces, with displacement of the tibia.

The other half of the joint is preserved in the preceding Series, No. 29.

B. 42. The bones of a Hip-Joint, exhibiting an irregular, nodulated deposit of osseous substance upon the margins of the head of the femur, and of the acetabulum. The articular surfaces thus enlarged have been deprived of their cartilages, and are hardened, polished, and very irregularly and deeply perforated.

B. 43. The bones of the Hip-Joints of a man aged seventy-one, exhibiting nearly symmetrical changes of structure; the effects, probably, of chronic rheumatism. There is an irregular and very abundant deposit of osseous substance around the margins of the acetabula and upon the borders of the heads and necks of the femora. Both the width and the depth of the acetabula are thus greatly increased; their articular surfaces, as well as those of the femora, are hard and rough, and a portion of the head of one femur is polished and ivory-like.

B. 44. A Humerus and a Scapula. There is a deposit of bone upon the end of the acromion, presenting an excavation on its under surface. The great tuberosity of the humerus presents a convex surface, which appears to have been adapted to, and to have moved in, the concavity on the under part of the acromion.

It is probable, that these changes followed the destruction of the tendon of the biceps muscle, either by disease or by accidental rupture.

- B. 45. Pelvis and Femora, from a young man. The head of the femur and the acetabulum on the left side exhibit changes consequent on long continued disease of the hip-joint. The acetabulum is wider and shallower than is natural: the head of the femur, deeply ulcerated, has wholly lost its natural form. The ulcerated surfaces had healed, and the bones were united by a soft tissue which permitted a slight degree of motion between them. The left os innominatum and femur, atrophied, probably in consequence of their disuse, are considerably thinner and smaller in all their dimensions than the bones of the opposite side; and the left side of the pelvis is contracted by the nearly vertical position of the ilium.
- B. 46. An Os Innominatum and Femur, from a boy, exhibiting effects of disease of the hip-joint, similar to those shown in the specimen last described. The walls of the acetabulum are in great part destroyed by ulceration, and its cavity communicates through three apertures with that of the pelvis. The head of the femur is also completely destroyed. All the bones are atrophied, and the ilium is placed almost vertically and deeply incurved.
- B. 47. Bones of two Knee-Joints from the same person. There has been inflammation in each joint, occasioning a deposit of new bone around the articular surfaces of both the femur and the patella. The patellæ, displaced outwards, have been adapted to the outer condyles; and their articular cartilages having been completely removed, the opposite surfaces of the bones have been absorbed in regular and mutually adapted grooves, and are hardened, polished, and ivory-like.
- B. 48. The Pelvis and Femora of an adult. The head of each femur is dislocated upon the dorsum of the ilium. Portions of the capsules of the hip-joints remain, but there is no vestige of either ligamentum teres. There has been absorption of the surface of the head of each femur, diminishing its size, and giving it an irregular conical form.
- The history of the case is not known. The dislocations may have been con-

genital, or, as the condition of the heads of the thigh bones may suggest, they may have been the consequence of ulcerative disease of the hip-joints.

- B. 49. The Bones of a Leg with the lower end of the Femur. The head of the tibia is fixed by firm osseous ankylosis to the articular surfaces of the femur and fibula. The shafts of the tibia and fibula are curved outwards. The wall of the tibia is irregularly thickened; and on the anterior and upper part, near the knee-joint, there is a rough and porous elevated surface of new bone. Over this surface there had long been an ulcer extending to the bone.
- B. 50. A Scapula and Humerus united by bone. The head of the humerus has disappeared, and the upper part of the shaft is fixed by an irregular growth of bone to the remains of the glenoid cavity and the base of the coracoid process. The spine and inferior costa of the scapula are thickened.
- B. 51. Bones of a Hip-Joint. The neck of the femur is not more than half an inch long. The head is expanded and flattened into the form of a disk; its margin is very irregular; its articular surface is soft, and perforated by numerous small holes. The acetabulum is wide and shallow, in correspondence with the form of the head of the femur, which exactly fitted in it. The notch of the acetabulum is very large, and much of the osseous tissue adjacent to it seems to have been destroyed.
- B. 52. A Scapula and the upper part of a Humerus diseased in the same manner as B. 44. The borders of the acromion are thickened and beset by nodules of new bone. A small portion of its inferior surface, indurated and polished, was adapted to a similar surface on the upper part of the head and the great tubercle of the humerus. Around the head of the humerus and on its tuberosities there are deposits of bone similar to those on the borders of the acromion.
- B. 53. A Humerus, Radius and Ulna. In consequence of chronic

disease of the elbow-joint, the fore arm appears to have been for a long time nearly fixed in a position of extreme flexion, with the hand in extreme pronation. The articular surface of the humerus is much deformed; the internal condyle is reduced in size and pointed; the trochlear cavity is nearly obliterated; the greater part of the articular cartilage was removed; the external condyle has a part of its surface hardened and polished; and nodules of new bone have been deposited around the borders of the articular surface.

The outer division of the greater sigmoid cavity of the ulna is hard, polished, and superficially grooved: the inner division is soft and rough as if it had been deeply ulcerated. The lesser sigmoid cavity is obliterated; and just below its place, there is a large and deep pit in which the tubercle of the radius rested. The head of the radius is directed backwards from the shaft. The articular surface has lost its cartilage, and new bone is deposited around a great part of its border. The anterior border of the head of the radius, which rested on the front of the external condyle of the humerus, has formed a wide and slightly concave surface, which is covered by hard polished bone, like that on the surface of the condyle itself.

The lower ends of the shafts of the radius and ulna are healthy.

B. 54. Portions of an Os Innominatum and a Sacrum, exhibiting the effects of inflammation in the sacro-iliac symphysis and the posterior part of the ilium. The surface of the diseased bone is ulcerated, and around it are irregular deposits of new bone. A large circular hole is seen in the ilium, the result of necrosis of a portion of its texture.

B. 55. An Os Innominatum and a Sacrum united by a bridge of bone, an inch wide, extending across the front of the right sacro-iliac symphysis. The symphysis itself appears to have been healthy.

B. 56. A similar specimen; but the bridge of bone is much wider,

extending from the upper edge of the sacrum to the margin of the superior aperture of the pelvis.

- B. 57. A similar specimen. The bridge of bone here extends across both the upper and the lower part of the front of the sacro-iliac symphysis; and it also appears as if portions of the surfaces of the symphysis itself are united by bone.

SERIES III.

INJURIES OF BONES AND JOINTS: FRACTURES AND DISLOCATIONS.

FRACTURES.

Process of repair of fractures in general.

By the formation of cartilage, and then of bone, inlaid between the adjacent surfaces or margins of the fragments, 95, 50, 94, 113, 90, 103, 98, 105, 108, 38, 63, 114.

By the formation of cartilage, and then of bone around, and ensheathing, the ends of the fragments (*i.e.* by Provisional Callus), 69, 70, 71, 96, 81, 82, 106, 92.

Completed repair, 104; and in Series I., 113, 114.

Deviations from the ordinary process of repair, in consequence of great displacement or detachment of the fragments, or of necrosis or other disease following the injury, 34, 51, 80, 99; and in Series I., 20, 21, 80, 81, 88, 218, 219.

Failure of the process of osseous union (Ununited Fractures), 36, 41, 46, 74,—2, 3, 5, 58, 117,—65, 66; and most of the specimens of fracture of the neck of the femur, and of the patella.

Repair of fractures extending into joints, 6, 44; and specimens of fracture of the neck of the femur, and of the patella.

Repair after removal of portions of bone, 86, 87, 88, 93, 109.

Fractures of the Skull, 83, 84, 116,—38, 63,—93, 109. See also Series VI., 23, 25, 32, 33, 34, 38, 39, 71.

Bones of the Face, 75.

Ribs, 81, 82, 106.

Costal cartilages, 4, 48, 73.

Pelvis, 20? 56, 62, 100, 101.

Clavicle, 35, 92.

Scapula, 36.

Humerus, 74,—2, 3, 58, 65, 66, 47, 104,—46; and in Series I., 113, 114.

Radius.

Of its shaft, 5, 41.

Of its lower end, 78, 94, 95, 89.

Ulna, 6, 5, 41, 85.

Fractures of the Femur.

Of the neck within the capsule, 8, 7, 18, 23, 54, 40,—17—19, 49—110, 119, 21, 22,—50, 107—

Of the base of the neck, 10, 11, 14, 15, 16, 32,—12, 76, 77—

Of the trochanters, 10, 11, 12, 14, 15, 16, 76.

Of the shaft, 98, 34, 51, 91, 103—114, 115, 117; and in Series I., 111, 112, 134.

Of the condyles, 34, 91.

Patella, 26, 52—29, 30, 72, 28,—105, 108.

Tibia, 67, 79, 90, 99, 113, 115, 44; and in Series I., 20, 21, 80, 81, 88, 89, 218, 219.

Fibula, 80; and in Series I., 90.

Bones of the tarsus, 9.

Separation of Epiphyses, 91.

Gun-shot Injuries, 37, 115.

DISLOCATIONS.

Of the Sternum, 64.

Clavicle, 97.

Shoulder, 42, 47, 55, 112, 118,—53—1? 59? 60?—

Elbow, 13, 33.

Wrist, 39, 89.

Hip, 100, 101, 102, 43,—20, 68, 56,—25,—24, 31; and in Series II., 54.

Knee, 111.

Foot, 120.

Toes, 57, 61.

1. A SHOULDER-JOINT, exhibiting partial absorption of the head of the humerus and glenoid cavity, with flattening and a great increase of the width of their articular surfaces. The surfaces of the scapula and humerus which were brought into contact by the absorption are exactly adapted to each other, and are covered by a substance like cartilage, so as to form a new joint. It is probable that these changes were the consequence of dislocation of the humerus.

2. Portion of a Humerus, in the middle of the shaft of which fracture occurred four years before death. The ends of the bone did not unite, but are enlarged, have become accurately adapted to each other, and have acquired a hard polished surface on those portions between which there was friction during the movements of the arm.

The use of the arm was so little impaired by the fracture that the patient worked as a sailor to the time of his death.

Presented by P. Brendon, Esq.

3. Portion of a Humerus, in which fracture of the shaft occurred many years before death. The ends of the bone did not unite: they are somewhat enlarged, and are covered by a substance like fibro-cartilage, and connected by a distinct membranous capsule, which is smooth upon its internal surface, and serves as a kind of capsular ligament to the false joint which is formed between the ununited portions of the bone.

From a middle-aged woman: the fracture was produced by a slight muscular effort.

4. Sections of the Cartilage of a Rib, which appears to have been fractured and reunited by new cartilaginous substance placed in the angles between the ends of its overlapping portions.
5. An Elbow-Joint, in which there has been fracture and dislocation. The radius and ulna are broken about two inches below the joint: and their fractured ends, not having united by bone, are connected by new capsules which have formed around them. The head of the radius is dislocated upwards and forwards in front of the humerus.
6. An Elbow-Joint, exhibiting a transverse fracture extending through the base of the olecranon into the cavity of the joint. A portion of quill is passed between the ununited fractured surfaces.
7. Portion of a Femur, exhibiting a vertical fracture of recent occurrence through that part of its neck which is covered by synovial membrane. Upon the anterior half of the circumference of the neck of the bone, the periosteal and synovial coverings are torn: upon the posterior half they are entire.
8. A Hip-Joint, exhibiting a vertical fracture of recent occurrence through that part of the neck of the femur which is covered by synovial membrane. The capsule is thickened, and a portion of it, which is detached and turned downwards, has lymph deposited upon its internal surface.
9. An Os Calcis, fractured transversely through its posterior part.

The plane of fracture extends from the posterior border of the upper articular surface to the middle of the posterior surface of the tuberosity.

The patient fell from a height, but did not strike his heel; and it appeared certain that the fracture of the os calcis was produced by the action of the muscles of the leg. He died of other injuries received in the fall.

10. Portion of a Femur, in which fracture of the neck and of the trochanter major occurred six weeks before death. The direction of the fracture is still evident; it extended through the base of the neck, and through the base of the trochanter major, nearly detaching this process from the rest of the bone. The head and neck were forced downwards and impacted between the trochanters. The several parts of the bone thus brought into contact are united so firmly that they could not be moved upon each other.
11. Portion of a Femur, in which there has been fracture of the neck and of the upper part of the shaft. The plane of one fracture extended through the base of the neck; that of the other extended vertically through the trochanters, so as to separate the posterior parts of these processes and of the bone between them. The head and neck of the femur are driven downwards and impacted in the cleft through the trochanters: and in this position the fractured portions are firmly united.
12. Portions of a Femur in which there has been fracture through the base of the neck, and, apparently, a fracture through the trochanter major like that in the specimen last described. The base of the neck has been driven into the cancellous tissue between the trochanters, in which situation it is firmly united by bone and fibrous tissue. The fracture of the trochanter has been firmly united by bone.
13. An Elbow-Joint, in which the head of the radius was dislocated backwards. No reduction of the dislocated bone having been effected, it has become extensively united to the side of the ulna. There appears, also, to have been a fracture of the internal condyle. All the bones are atrophied.

14. Portion of a Femur, exhibiting fracture of its neck and shaft. Two distinct lines of fracture may be traced, one across the base of the neck, the other passing obliquely through the shaft just in front of, and below, the trochanter major, and through the trochanter minor. The base of the neck is fixed between the fragments, but not tightly.
15. Portion of a Femur, in which, as in the last described, there is a fracture through the base of the neck and the upper part of the shaft. One line of fracture passes vertically through the base of the neck; the other extends vertically through the middle of the great trochanter and for about three inches down the shaft, and through the trochanter minor. The head is impacted between the fragments, and osseous union has taken place in the lower part of the vertical fracture.
16. Portion of a Femur, in which there is fracture of its neck and shaft. The fracture runs obliquely through the base of the neck; it also extends in several directions through the adjacent parts of the shaft, separating some small portions of it. The trochanters are entire.
17. Portion of a Femur, in which fracture of the neck occurred many years before death. There has been complete absorption of the neck of the bone. The surfaces of the head and of the space between the trochanters which have been in contact, and which probably moved freely on each other, are very hard, polished, and ivory-like.
18. Portion of a Femur, exhibiting a fracture through its neck, just beyond the base of the head. The direction of the fracture is such, that the surface of the bone exhibits on the one side an eminence, and on the other a corresponding cavity. The periosteum and the synovial membrane covering the neck are torn in only the anterior half of its circumference: upon the other half, the membranes are entire and still connect the two parts of the bone, which may thus, as well as by the mutual adaptation of the uneven surfaces of the fracture, have been held together with very little displacement.

19. A Hip-Joint, exhibiting fracture of the neck of the Femur within the capsule, which occurred many years before death. The neck of the bone is absorbed. Bristles are passed beneath three thick fibrous bands, which extend from the fractured surface of the head of the bone to the capsule. The capsule is generally thickened, as if by the organization of lymph upon its internal surface: and the fractured surfaces are covered by thin smooth layers of fibrous tissue.
20. A Hip-Joint, in which a dislocation of the head of the Femur upon the ischiatic notch occurred about three weeks before death. The ligamentum teres has been torn across its middle; no union of it has taken place. The cartilage covering the head of the bone is in part absorbed. The opening in the capsule through which the head of the bone escaped was situated at the posterior part of the joint. Only a small part of this opening is visible, the larger part of it being closed by the union of the torn edges of the capsule. The acetabulum is fractured, but it is doubtful whether this occurred during life.
21. Sections of the Head and Neck of a Femur, from an aged woman. On the surface of each section, a white line is visible, which extends obliquely from above downwards and inwards, in a plane which would include the base of the neck at its upper part and the base of the head at its lower part. The line marks the section of a thin layer of fibrous tissue, and appears to indicate that a fracture of the neck of the femur has been united partly by fibrous tissue and partly by bone. The head of the femur is below the great trochanter, and there is an accumulation of bone on the posterior surface of the neck, in a line corresponding with the direction of the presumed fracture.
22. Sections of the Head and Neck of the other Femur of the same woman. They present the same appearances as those last described, but the line of fibrous tissue is here uninterrupted, while in the preceding it is in some places interrupted by small portions in which the osseous tissue is continuous, as if the fracture had in them united by bone.

The preparations were taken from a body supplied for dissection, of which no history could be obtained.

23. A Hip-Joint, exhibiting fracture of the neck of the Femur. The fracture extends vertically through the neck just beyond the base of the head. The capsule is much thickened, and the neck of the femur is absorbed.

24. A Hip-Joint, exhibiting dislocation of the head of the Femur with elongation of the capsule. The capsule is entire, and measures, now that it is laid open, between four and five inches in length. The cavity of the acetabulum has almost disappeared, being both reduced in size and filled by fibrous tissue. The ligamentum teres is absent, and a portion of the head of the femur has been absorbed. The capsule around the neck of the femur presents a fringe of slender growths.

The specimen is figured in the *Medico-Chirurgical Transactions*, Vol. xxiv. Pl. iv., fig. 1, London, 1841 : in illustration of a paper by Mr. Stanley, "On Dislocations, accompanied by Elongations of the Ligaments."

25. A Hip-Joint, exhibiting a recent dislocation of the head of the Femur on the lower edge of the obturator externus muscle. The ligamentum teres is torn from its attachment to the head of the femur. The capsule is extensively lacerated at the inner side and lower part of the joint. The obturator externus muscle is lacerated where the femur rest partly on it and partly on the subjacent obturator ligament.

26. A Patella, with a small piece of bone, which had probably been broken off, and is now connected by ligament with its lateral border.

27. Portion of a Skull, exhibiting a fracture through the posterior part of the orbital plate of the frontal bone.

The fracture was occasioned by the passage of an iron rod through the orbit into the brain.

28. Two Patellæ from the same person. Both bones have been fractured transversely. The fractured portions of each, having been separated to a distance of five inches from each other, are connected only by a thin fibrous membrane. The fragments are all, but not equally, enlarged.

29. Section of a Patella which has been fractured into three pieces.

The portions are united by a thick ligamentous substance, and are all enlarged; the upper fragment alone is as large, and has the same form, as an ordinary adult patella.

30. Section of a Patella in which there has been a transverse fracture. The fractured surfaces are united by a thick portion of ligament about an inch in length, which is smoothly lined, as if by a continuation of the synovial membrane. As in the preceding specimens, the fragments are enlarged, and their texture is unaltered.
31. A Hip-Joint, exhibiting dislocation of the head of the Femur on the dorsum of the ilium, which occurred a considerable time before death. On one side of the preparation is a part of the original capsule; this has been extensively divided in front, to show the acetabulum, which is contracted into a narrow triangular cavity nearly filled by fibrous tissue. On the other side of the preparation, the head of the bone is shown, deformed, reduced in size, and surrounded by a thick membrane of tough fibrous tissue, which is smooth on its internal surface. This membrane, forming the capsule of the new joint, is in part newly formed, and in part consists of the remains of the former capsule: it is extensively divided behind, to give a distinct view of the head of the bone. The cavity of the new capsule communicates with that of the old capsule below the neck of the femur, and their smooth internal linings are continuous.
32. Sections of the upper part of a Femur, in which a fracture extended obliquely through the base of its neck, in a line marked by bristles. The synovial and periosteal coverings of the neck of the bone are entire, and there is, in consequence, no separation of the fractured surfaces.

The patient was a man sixty years old. He was knocked down, and complained of pain in the hip; but there was neither shortening nor eversion of the limb, and its several motions could be exercised with perfect freedom and power. He died with intestinal disease five weeks after the accident. The case is described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. xiii., p. 511. London, 1825. Case Book, Vol. i., p. 75, No. 114.
33. An Elbow-Joint, exhibiting dislocation of the Radius and Ulna

backwards, which occurred a considerable time before death. The articular surface of the humerus was completely covered by a newly-formed capsule, the cavity of which is laid open from the front. The head of the radius and the articular surface of the ulna are also inclosed in new capsules, separated from each other and from that which incloses the articular end of the humerus. The sigmoid cavity of the ulna appears to rest on a prominence of bone, extending from the posterior surface of the trochlea of the humerus. The head of the radius is confined in the place which it now occupies by a thick fibrous cord, extending from its upper surface to a process of bone connected with the margin of the humerus just above the outer condyle.

34. A Knee-Joint, exhibiting the consequences of a fracture in the lower part of the femur. The fracture extended transversely through the shaft a little above the condyles, and downwards between the condyles into the joint. The upper portion of the bone was forced downwards by the side of the patella, and a few days after the fracture, it protruded through the integuments, and could not be again replaced. In this situation it has become firmly fixed by bone to the condyles and the lower part of the shaft. An inch and a half of the protruding portion of the femur perished, and its separation from the living bone had commenced: a shallow groove is formed between them. The articular surfaces of the knee-joint are ankylosed.

35. The Scapular end of a Clavicle, with a small portion of bone united to it by a distinct joint.

It is uncertain whether this had been separated by fracture.

36. Portion of a Scapula exhibiting fracture of the Acromion, which has been united by fibrous tissue.

37. Portion of a Sternum fractured upon its internal surface by a bullet, which has become firmly imbedded in the surface of the bone, and in new bone deposited so as to form a shallow pit beneath it.

38. Portion of a Skull in which an extensive fracture of the adja-

cent parts of the occipital and parietal bones occurred four years before death. Some portions of bone, detached by the fracture, were removed at the time of the accident: other portions were left, and have been re-united by bone. There is also a close union by bone of two lines of fracture extending outwards through the parietal bones. The margins of all the broken portions of bone have been smoothly rounded, and their exposed diploe is covered in by compact bone.

Case Book, Vol. i., p. i., No. 4.

39. A Wrist-Joint, exhibiting dislocation of the carpal ends of the radius and ulna backwards. The radius is arched with a convexity directed backwards, near its lower end: but there is no appearance of its having been fractured.

40. Portion of a Femur, exhibiting an irregular fracture through the base of its neck, which occurred about five months before death. The periosteal and synovial coverings are torn upon only the posterior side of the neck of the bone; upon its anterior side they are entire. The portion of the neck which remains connected with the head of the femur is not absorbed.

The patient, a middle-aged man, fell in the street, and his hip struck against the curb-stone. Immediately afterwards the limb was inverted, and an inch shorter than the other; but no crepitus was felt. In the suspicion that dislocation existed, repeated attempts at reduction were made. The case is recorded by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. xiii., p. 508. London, 1825. Case Book, Vol. i., p. 73, No. 113.

41. A Radius and Ulna which were fractured a considerable time before death. The overlapping ends of the bones are united by thick tough layers of fibro-cellular tissue. They have been in part separated, to show the mode of their union.

42. A Shoulder-Joint, exhibiting dislocation of the humerus, which occurred eighteen months before death. The head of the humerus rests on the anterior surface, near the inferior border, of the scapula. The tendons of the supra-spinatus, infra-spinatus, teres minor, and sub-scapularis muscles are entire. A bristle is passed beneath the tendon of the sub-scapularis, close to its insertion. A bristle is also passed beneath the

tendon of the long head of the biceps, which retains its attachment to the edge of the glenoid cavity. Two bristles are passed beneath the circumflex nerve, which has been compressed by the dislocated head of the humerus, and is, in consequence, flattened and firmly adherent to the capsule of the joint.

The dislocation was followed by permanent paralysis of the deltoid muscle.

43. A Hip-Joint, exhibiting dislocation of the Femur which occurred many years before death. The head of the femur has been thrown upwards and forwards, and is lodged in a cavity, formed in part by new bone, and in part by what appeared to be the displaced cotyloid ligament, at the margin of the ilium, in the situation of the anterior inferior spine. The ligamentum teres is flattened and elongated, but it retains its natural connexions; bristles are passed beneath the two portions of this ligament, which are attached to the margin of the original acetabulum. The lower part of the head of the femur is irregularly absorbed.

The patient was forty years old. When he was about fourteen years old, he fell from a ladder and injured his hip. He had great pain at the time of the accident, and for many months much difficulty in walking; but he recovered, and was in an active walking occupation till his last illness. The case is recorded by Mr. Wormald, in the *London Medical Gazette*, Vol. xix., p. 658, London, 1837.

44. The lower extremities of a Tibia and Fibula. A recent fracture extends through the articular surface and cartilage of the tibia. The communication of this fracture with the ankle-joint is closed by a thin layer of lymph firmly adhering to all the parts of the articular cartilage through which the fracture extends.
45. Sections of the Head, Neck, and part of the shaft of a Femur. The neck of the bone is considerably shortened, and there is irregular osseous deposit upon its external surface.

It is uncertain whether these changes were consequent on injury. The external appearance of the bone might indicate that there had been a fracture of the neck; but the uniform character of its tissue, as shown on the surface of the sections, is opposed to such a conclusion.

46. Portion of a Humerus, in which distinct fractures extend vertically through both its condyles into the elbow-joint. The fractured surfaces are united by fibrous tissue.

47. A Shoulder-Joint with the shaft of the Humerus, exhibiting dislocation and fracture. The head of the humerus is thrown forwards beneath the coracoid process. The tendon of the long head of the biceps is entire. The tendons of the supra-spinatus, infra-spinatus, teres minor, and sub-scapularis muscles are also entire. There have been two fractures in the shaft of the bone, and they are both firmly united.

The injury consisted, in the first instance, of the dislocation and a single fracture. No attempt was made to reduce the dislocation, and when the fracture had united, the patient fell down, and the second fracture then occurred.

48. Section of the Cartilage of a Rib, which has been fractured and is firmly united. The uniting medium consists of a substance like cartilage with small deposits of bone in it.

49. Portion of a Femur, in which fracture of the neck occurred many years before death. The neck of the bone is absorbed: both the fractured surfaces are thinly covered by fibrous tissue; and that of the head has become firmly united to the lower part of the thickened capsule by a broad band of fibrous or ligamentous substance.

50. Portion of a Femur, exhibiting fracture of its neck. The plane of the fracture is vertical, extending from the upper margin of the head straight downwards through the neck to the outer part of its lower border. Bristles are introduced between the fractured surfaces, which are in close apposition, and it will be observed that the attachment of the capsule to the bones is entirely beyond the line of the fracture. That portion of the neck of the bone which remained connected with the trochanters is partly absorbed, and the union of the fractured surfaces, although not complete, is by osseous matter inlaid between them.

The individual from whom this specimen was taken was eighteen years of age. In a fall from a cart he injured his right hip; such symptoms ensued as gave rise to the belief that he had dislocated the head of the femur into the foramen ovale. Efforts at reduction were accordingly made. About three months after the injury he died with small pox. The case is described by Mr. Stanley in the *Medico-Chirurgical Transactions*, Vol. xviii. p. 256, London, 1833. Case Book, Vol. i. p. 86, No. 122.

51. A Knee-Joint from a young subject, with an oblique fracture of the Femur just above the condyles. The upper portion of the femur, crossing the lower portion obliquely, has been united by bone to the back part of the outer condyle. About two inches of the extremity of the upper portion of the femur protruding through the skin were sawn off during life. Inflammation extending to the knee-joint has produced absorption of the articular cartilages and adhesion of the opposite parts of the joint. At the bottom of the bottle is the piece of bone which was removed by the saw.
52. A Patella, in which a vertical fracture occurred a short time before death. The tendinous covering of the anterior surface of the bone is entire. Union of the fracture has not yet commenced. The articular cartilage is in part absorbed; but this had, probably, occurred before the fracture.
53. Shoulder-Joint, exhibiting an incomplete dislocation of the Humerus backwards. The head of the humerus, unaltered in form, rests against the posterior border of the glenoid cavity. The tendons of the supra-spinatus and infra-spinatus are detached from the tuberosity of the humerus, but retain their connexion with the capsule. The tendon of the biceps is displaced from its groove in the humerus, but retains its attachment to the glenoid cavity. The tendons of the teres minor and subscapularis retain their attachments to the humerus. The capsule of the joint is thickened.
54. Portion of a Femur, in which a fracture of the neck within the capsule occurred a short time before death. The synovial and periosteal membranes are entire on the posterior half of the neck.
55. A Shoulder-Joint, in which a complete dislocation of the Humerus occurred about a fortnight before death. The head of the humerus was found resting on the subscapular fossa, and immediately below the clavicle. The tendon of the biceps retains its attachments to the margin of the glenoid cavity. The

tendons of the supra-spinatus and infra-spinatus are detached from the humerus, but retain their connexion with the capsule. The tendons of the teres minor and sub-scapularis retain their attachment to the humerus. There is a large lacerated aperture in the capsule.

56. A Hip-Joint, exhibiting a dislocation of the head of the Femur downwards and backwards, which occurred twelve hours before death. The head of the bone is situated on the ischium, opposite to the lesser ischiatic notch and the upper part of the tuberosity. The tendon of the obturator internus is torn from its muscular fibres; some of the fibres of the pyriformis, gemelli, and glutæus minimus are also torn. There is also a fracture extending through the os innominatum near the acetabulum.

The patient was a maniac, who leaped from a third story window. He died of other injuries received at the same time. The case is published by Mr. Wormald, in the *London Medical Gazette*, Vol. xix., p. 657, London, 1837.

57. The Bones of a Great Toe. The second phalanx, dislocated on the upper surface of the first phalanx, has there become firmly fixed by bone.

58. Portion of a Humerus, which has been fractured near the middle of its shaft. New bone is formed upon its outer surface, immediately above and below the fracture. The extremity of the lower portion of the bone has perished, and is in progress of exfoliation. The fractured surfaces were united by a soft substance; and a distinct capsule has been formed around the ends of the bone by the condensation of the surrounding cellular tissue.

From a girl twenty-three years old. The fracture was caused by external violence six years before death, while she was affected with syphilis.

Presented by William Taylor, Esq.

59. A Shoulder-Joint. The capsule is thickened: in its upper part is an irregular opening, and the tendon of the supra-spinatus is here seen to have been torn away from the tuberosity of the humerus. The tendon of the biceps appears also to have been torn near its attachment to the glenoid cavity, and has become

adherent to the head of the humerus : a portion of it in shreds remains attached to the edge of the glenoid cavity.

60. The other Shoulder-Joint of the person from whom the preceding specimen was taken. The capsule is thickened. The tendon of the biceps, separated from the glenoid cavity, has become firmly adherent to the head of the humerus, and an irregular nodulated deposit of bone has taken place around the part to which it is now attached.

It is presumed that the alterations in these joints were the effects of external injury ; probably, of dislocation of the humerus.

61. Bones of the first and second phalanx of a Great Toe. The bone of the second phalanx is dislocated, and firmly united by bone to the upper surface of the first phalanx.

62. Portion of an Os Innominatum, exhibiting united fracture, with absorption of bone, in the bottom of the acetabulum. The fracture extended in several directions from the centre of the acetabulum to its circumference.

The fracture was caused by a fall on the trochanter major a few months before death.

63. A Skull-Cap, in which fracture with loss of bone was produced by the wheel of a cart passing over the head several years before death. The frontal and right parietal bones were broken into many pieces ; and the sagittal and coronal sutures were separated. Several portions of bone, which were insulated by the fracture, were removed, leaving numerous and considerable apertures in the skull ; other insulated portions are thinned by absorption, but their edges are reunited by osseous substance. Considerable thickening of the frontal bone has taken place in one situation contiguous to the fracture. No new bone appears to have been formed in the spaces left after the removal of the loose fragments.

64. Section of a Sternum, exhibiting a dislocation between its first and second bones. The two bones overlap considerably, the first projecting in front of the second. The contiguous periosteal surfaces are firmly united. There is also a deposit

of osseous substance upon the anterior surface of the second bone immediately below the projecting end of the first.

The dislocation occurred five months before death, in an elderly man who fell from a tree. He died with cancer of the œsophagus. The other half of the sternum and the œsophagus, are in the Museum of the Royal College of Surgeons of England.

Presented by Joseph Swan, Esq.

65. Section of a Humerus, in which a fracture of the middle of the shaft occurred five weeks before death. The ends of the bone are not united; but they are held firmly together by a ring of rough osseous substance deposited on the whole circumference of their outer surfaces, and extending some way above and below the fracture.
66. The other half of the Humerus, No. 65, macerated.
67. Section of a Tibia, in which are two fractures which occurred twelve weeks before death; one extends across its shaft, the other through the cancellous texture of its inferior extremity. The fractured surfaces are united only by soft substance.
68. A Hip-Joint, in which a dislocation of the Femur occurred a week before death. The capsule has been opened in front to show the head of the femur, which is deprived of many large portions of its cartilage, some of which are seen loosely connected with the neck of the bone. At the back part of the joint is the wide laceration in the capsule which was made by the head of the femur in its dislocation from the acetabulum.
It was supposed that the dislocated head of the femur was situated upon the ischium, close to its spine. A portion of the posterior part of the rim of the acetabulum, in the presumed direction of the dislocation, is separated by fracture. Upon the front part of the joint there is also a detached portion of the rim of the acetabulum connected with the capsule. The surface of this piece of bone is very smooth, and is adapted to a corresponding surface of the ilium immediately below the anterior inferior spine; and above this surface, there is a deposit of bone, making it probable that the changes in this part of the joint were the result of some injury previous to the dislocation.

69. Section of the Tibia of a Dog, exhibiting the process of union on the tenth day after a transverse fracture through the middle of the shaft. A ring-shaped mass of cartilaginous substance is deposited between the periosteum and bone, around and for some way above and below the line of the fracture. In the centre of this cartilage there are some minute deposits of earthy matter. The line of fracture is distinct: in the medullary cavity it is interrupted by a deposit of cartilaginous substance; but in the walls of the bone it is still open.
70. Section of the Tibia of a Dog; the other half of the specimen No. 69. The periosteum is turned downwards and completely separated from the cartilaginous substance deposited upon the bone around, above, and below, the fracture.
71. Section of the Tibia of a Dog, exhibiting the process of union on the eighteenth day after a similar fracture. The cartilaginous substance deposited between the periosteum and bone around, above, and below the fracture, is ossified, except in that part which corresponds with the line of fracture. This line is still open, as in the preceding specimen, in the wall of the bone, but is closed by cartilaginous substance in the medullary tube.
- The experiments by which these specimens were obtained were performed by Mr. Stanley.
72. Two portions of a fractured Patella, which were united by ligamentous substance. The lower portion is much enlarged and altered in form by the deposit of osseous substance upon its borders.
73. Portions of Costal Cartilages. There has been a fracture of the cartilage of one of the false ribs. Its portions overlap, and are firmly united by a ring of bone extending around them.
74. A Shoulder-Joint, exhibiting an ununited fracture of the neck of the humerus, with obliteration of the axillary artery from the pressure of the lower portion of the bone against it. The

fracture extends transversely through the humerus, immediately below its head and below the tuberosities; and it communicates with the cavity of the shoulder-joint. A small detached piece of the bone is connected with the synovial membrane. The synovial membrane is thickened, and its internal surface is rough. A bristle is passed beneath the tendon of the biceps. The axillary artery is obliterated, to the extent of half an inch, in the situation in which the end of the lower portion of the humerus pressed against it. Immediately above the obliterated part, the infra-scapular artery arises, of its usual size, and pervious. Close to the infra-scapular is the posterior circumflex artery, obliterated in the first half inch from its origin, and then pervious by means of the collateral circulation. About two inches above the origin of the infra-scapular, a large branch arises from the axillary artery; this branch, extending down the inside of the arm, was continued into one of the arteries of the fore-arm, and formed a principal channel for transmitting blood from the upper to the lower part of the limb.

From a man aged seventy-five. The injury occurred ten years before death.

75. *Ossa Nasi*, exhibiting the union of a transverse fracture a short distance above their lower borders.
76. Section of the Femur of an old man, in which a fracture through the base of its neck, and through the upper part of the great trochanter, occurred many years before death. The neck was driven into the upper part of the shaft between the trochanters; and in this situation a layer of compact bone has been formed on the whole of the broken surface of the cancellous tissue of the shaft and trochanters, in such a manner as to form a smooth excavation, in which the neck of the femur rests. To this excavated surface the neck of the femur, itself also covered by compact bone, was connected by ligamentous tissue. The fracture through the trochanter is completely united by bone.
77. A similar specimen, except in that the fractured base of the

neck is partially absorbed, and there is no appearance of fracture of the trochanter.

From a woman eighty-five years old. The fracture occurred three years before death.

Presented by William Radnor, Esq.

78. Section of the Radius of a young man, which has been fractured three quarters of an inch above its carpal articular surface. The posterior or dorsal margin of the upper fragment is driven into the cancellous tissue of the lower one: their palmar margins are in contact, but a projecting angle is here formed, in the front of the wrist, at the line of fracture. The fracture is united, and new bone is formed in the angle between the displaced dorsal margins of the fragments.
79. Section of a Tibia from a case of compound fracture, in which amputation was performed eleven weeks after the occurrence of the injury. The two portions of bone are held firmly together by osseous substance deposited around the torn edges of the periosteum, and in the contiguous cellular tissue. The union of the fractured surfaces of the walls of the bone and of its medullary tissue is not yet complete; the uniting medium here consisting of only soft substance.
80. Section of a fractured Fibula; from the same limb as No. 79. A small piece of bone, which was detached, has been re-united. The upper and lower portions of the fibula have become so displaced that the fractured end of the lower has rested against the outer surface of the upper portion. In this situation they have become firmly united by bone.
81. Section of a fractured Rib, which has re-united with displacement and overlapping of its ends. The firm union of the two portions of the rib has been effected by the abundant deposit of osseous substance in the texture of the periosteum and contiguous cellular tissue around, and for some way above and below, the fracture. A spiculum of bone projects from one side of the rib; this was probably a fragment separated by the fracture, and re-united to the outer surface of the rib.

82. Section of a Rib with its cartilage. The rib had been separated from the cartilage, but has reunited to it. The union is effected by an abundant deposit of osseous substance, apparently in the texture of the periosteum and perichondrium, and in the contiguous cellular tissue around and for some way above and below the line of separation.

83. Section of a Skull-Cap, exhibiting a fracture extending in several directions through the anterior part of the parietal bones. In one situation there is a fracture of the outer, without any corresponding fracture of the inner, table.

84. Section of a Skull-Cap, exhibiting a comminuted circumscribed fracture of the outer and inner tables of one of the parietal bones. Many pieces of the inner table are depressed.

During life the outer table was raised by the elevator; and it was supposed that the instrument was acting upon the whole thickness of the skull, whereas the fragments of the inner table remained unmoved.

85. Portion of an Ulna from an adult, split and detached by a fracture which was occasioned by the arm being caught in machinery. The fractured portion, about four inches in length, comprises in its whole extent about one half of the thickness of the ulna.

It is remarkable that the bone was splintered to so great an extent longitudinally without the fracture passing at any part through the entire thickness of the shaft. The vacancy left in the bone by the removal of this fragment was filled by granulations; but, whether these granulations ossified could not be satisfactorily ascertained.

86. Radius and Ulna of a Dog. A portion of the middle of the shaft of the radius, in its entire thickness and with its periosteum, was removed ten weeks before the dog was killed. In the upper part of the bottle is the piece of bone which was thus removed. The vacant space was found filled by soft cellular tissue. The shaft of the ulna opposite to and corresponding with the vacancy in the radius, is considerably enlarged by the deposit of osseous substance beneath the periosteum.

87. Radius and Ulna of a Dog, on which an experiment was performed similar to that described in No. 86; with this exception, that the bone alone was removed, the periosteum being divided and separated by a scalpel from the bone, to admit of the removal of the latter from within it. The vacant space in the radius is here completely filled by newly formed osseous substance.
88. Radius and Ulna of a Dog, in which an experiment was performed similar to that described in No. 87, and in which the periosteum was not removed with the bone. The vacancy in the radius is here almost completely filled up by newly formed osseous substance. The ulna has become bent in the situation of the experiment upon the radius, apparently in adaptation to an abundant deposit of osseous substance beneath the periosteum of the radius.

The experiment was performed by Mr. Stanley.

89. Portions of a Radius and Ulna. The radius has been fractured a little more than an inch above its carpal end. The union is firm, but there is a prominent angle on the dorsal aspect of the radius in the line of the fracture, and an elevation of new bone on the corresponding part of the palmar surface, where it is probable that the palmar margin of the upper fragment was driven into the cancellous tissue of the lower one. The triangular fibro-cartilage was almost completely separated from the radius.
90. Portions of a Tibia, from a case of compound fracture through the middle of its shaft. The portions of the bone, partly overlapping, partly driven into each other, are united by new bone placed between their adjacent surfaces, but not surrounding them.
91. Portion of a Femur, exhibiting a separation of its shaft from the lower epiphysis, and a fracture extending between the condyles into the knee-joint. The violence of the injury has also occasioned the stripping up of the periosteum from the shaft of the femur to the extent of many inches; and the shaft protruded through the muscles on the inner side of the thigh.

Parts of the periosteum, which were stripped from the shaft, remain attached to the condyles. A line of new bone is formed on the anterior part of the shaft, along the torn edge of that part of the periosteum, which remained attached to the shaft.

From a boy aged sixteen. The injury was produced by a rope entangled round the leg. Amputation was performed three weeks after the injury.

92. Sections of a Clavicle, exhibiting a fracture which occurred while the patient was holding a weight above his head. Considerable progress has been made in the reparation of the fracture, the ends of the bone being held firmly together by an osseous ring extending around them. The periosteum is in part separated, to show that this osseous ring is deposited wholly beneath the membrane. The general texture of the clavicle does not appear diseased.

From a man aged sixty. He stated that he had suffered rheumatic pains in the clavicle for some time before the fracture occurred: but he was not aware of the occurrence of the fracture; and when, about two months afterwards he came under the care of a surgeon, the ring of bone around the clavicle received so distinct a pulsation from the subclavian artery, that it was suspected to be an aneurism. The patient died of erysipelas of the head three months after the fracture of the clavicle.

93. Portions of the Crania of two young Dogs, upon whom the operation of the trephine was performed two months before they were killed. The piece of card indicates the size of the trephine which was employed. In each instance the opening is narrowed and altered in figure. The deposit of osseous matter has taken place wholly from the edges of the opening in the bone, and in no degree from the pericranium or dura mater.

The experiment was performed by Mr. Stanley.

94. Sections of a Radius. At its carpal end there has been a transverse fracture immediately above the line of the epiphysis, and the posterior or dorsal margin of the upper fragment has been driven into the cancellous tissue of the lower one. The palmar margin of the upper fragment projects forwards, or in the direction of the palm; and the dorsal surface of the lower fragment projects far backwards, similarly to that in No. 78, but differently from that in No. 89. The fracture is united,

and a buttress of new bone has formed on the dorsal and radial sides of the displaced portions.

95. Portions of a Radius and Ulna. Both bones have been fractured, just above their carpal ends, in several directions both vertically and transversely, as indicated by the bristles placed in the soft substance like cartilage, by which the lines of the fracture are filled.
96. Section of the Tibia of a Dog, which was fractured a fortnight before death. New osseous substance is thinly deposited in a ring beneath the periosteum, around, and for some way above and below, the line of fracture; but in the line of the fracture, as well as in that part of the new bone which immediately surrounds the line, the osseous union is not completed; a line of cartilage only is here seen on the surface of the section, just as in Nos. 69, 70, 71.

The experiment was performed by Mr. Stanley.

97. Portion of a Clavicle, with the upper piece of the Sternum and the First Rib, from an adult. The sternal end of the clavicle is dislocated downwards and forwards. The capsule belonging to its articulation with the sternum is torn; but the costoclavicular ligament is entire. The first rib is separated from its cartilage.
98. Section of a Femur, in which there has been a fracture through the middle of its shaft. The section was made after softening the bone in dilute hydrochloric acid. The fracture is firmly united, with the upper portion of the bone projecting in front and on the inner side of the lower. The uniting medium consists of bone placed between the adjacent surfaces of the displaced portions of the femur; and in this new bone there are formed cancellous tissue of healthy aspect, and an outer thick wall of compact tissue. This wall of the uniting medium of new bone is connected with the surfaces of the two portions of the femur, and with the layers of compact new bone by which their medullary tubes, exposed by the fracture and not placed in apposition, are covered in. The corresponding parts of the walls

of the overlapping ends of the fragments are very thin, as if in that progress of absorption by which, ultimately, the cancellous tissue of the uniting medium would have become continuous with that of both portions of the broken bone.

99. Section of a Tibia, in which a compound fracture occurred six months before death. The fractured surfaces, displaced and overlapping, are consolidated by bony matter. The extremity of one of the portions of fractured bone, separated either by the fracture or by exfoliation, lies loose in a cavity between the fractured surfaces. The portion of bone at the bottom of the bottle was found loose in the same cavity.

The other half of the bone is preserved dry, C. 93.

100. Section of the Head and Neck of a Femur, with the Os Innominatum of a man in whom dislocation of the femur and fracture of the acetabulum occurred fifty years before death. The dislocation was reduced; but, soon after, the head of the bone again escaped from the acetabulum, and was not again reduced. The head and neck of the femur are altered in form; shortened, flattened, and much increased in their vertical diameter; and the cancellous tissue of a thick layer of the head of the femur is consolidated and hard. A new and deep osseous cavity, with very thick walls, extends from the os innominatum, as if growing out from the original acetabulum, and incloses the head and a part of the neck of the femur. The wall of bone by which this cavity is separated from that of the pelvis, and which includes the former floor of the acetabulum, is an inch and a quarter in thickness, and is chiefly formed, like the rest of the walls of the cavity, of hard compact new bone. The surface of the cavity and that of the head of the femur are covered and partially connected by fibrous tissue: they have no articular cartilage. The obturator internus muscle and sciatic nerve are seen in their natural situations, but are flattened in consequence of the altered form and enlargement of the surrounding parts.

The patient was eighteen years old at the time of the dislocation. His limb was a little shortened, but he had good use of it. Case Book, Vol. i., p. 128, No. 154.

101. The other half of the Hip-Joint, described No. 116, after maceration.

Presented by Thomas Wormald, Esq.

102. A Hip-Joint, with the head of the Femur, and part of the acetabulum from the opposite joint, of a man who had a dislocation of the femur on the dorsum of the ilium, three years before death. The dislocation was soon reduced, and the only traces of its effects which remain are, that there is a strong band or collar of ligamentous tissue around the base of the neck of the femur at its upper part, and that a slip of the ligamentum teres is attached to the notch of the acetabulum, external to the cotyloid ligament. But with this exception, the ligamentum teres presents no sign of having been torn.

Case Book, Vol. i., p. 127, No. 153.

103. Section of a Femur, in which there was an oblique fracture through the shaft near the condyles. The upper portion of the bone projects far down in front and on the inner side of the lower portion; but their adjacent surfaces are firmly united by intermediate new bone.
104. Section of a Humerus, in which a fracture of the shaft at the attachment of the deltoid muscle has been exactly united, so that both the walls and the cancellous tissue are uninterruptedly continuous; and, except by a slight deviation of its axis, and a small external deposit of new bone, the situation of the fracture could hardly be discerned.
105. A Patella which has been fractured transversely, near the attachment of the ligamentum patellæ. A part of the line of fracture still remains open; but in another, and smaller part, the two portions are smoothly united by firm and healthy bone.
106. Parts of two Ribs which were fractured a fortnight before death. The extremities of the fractured portions are in close contact, and are surrounded by a broad ring of callus, par-

tially ossified. A section of one of the ribs shows the periosteum continued over the exterior of the callus.

107. Sections of the upper part of a Femur, from a man aged eighty-two, who was believed to have received a fracture of the neck of this bone two years before death.

Presented by Walter Jones, Esq.

“The history of the case is clearly that of fracture of the neck of the femur; the appearances of the bone show that there has been a fracture which has re-united by an osseous medium; and the direction of the fracture is such as, in my opinion, can permit no doubt that it was confined to the portion of the neck of the bone covered by synovial membrane: consequently, that it was wholly within the capsule. The fracture extends through the basis of the head of the bone, in the line of its junction with the neck. As in other cases of the same kind, great part of the neck of the bone has disappeared, and, in consequence, the head is proportionately nearer to the trochanter major and shaft of the bone; its re-union has in fact taken place, in part to the remaining portion of the neck, and in part to the shaft. This union is certainly osseous. In addition to the first maceration of the bone with its surrounding soft parts, it was subsequently immersed for several days in a strong solution of carbonate of potash; and one half of the bone has been boiled in water for three hours without the slightest yielding perceptible in the line of the fracture.”

Description of the specimen by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. xxiv., p. 13. London, 1841.

108. Patella fractured in three lines leading from the centre to the circumference. The portions are completely and closely united by bone, and with very little displacement: the lower portion alone being pushed somewhat forwards. Some new bone is deposited along the lines of fracture on the anterior surface of the patella: the posterior surface is smooth, and presents no new bone; the margin of one of the fractures has still the appearance of a fracture of recent occurrence.

It is probable that the fracture was caused by a blow upon the patella.

109. Portion of a Skull, in which a trephine hole, made thirty-four years before death, has been nearly filled up by new bone. The greater part of the new bone has been produced from the border of the aperture in the inner table. The aperture still remaining is of an irregularly oval form, about five lines long, and a line and a half wide. Its margins are sharp, and its borders shelf obliquely inwards and downwards from the surrounding healthy bone. It was filled up by a tough fibrous membrane.

The patient, a Sergeant of Marines, was struck on the head with a tomahawk, at the taking of the Danish fleet in 1807, and was trephined in Haslar Hospital shortly afterwards by Sir Stephen Hammick.

Presented, with the history derived from the patient, by George Mantell, Esq.

110. Sections of the upper part of a Femur fractured almost vertically through the neck, at the base of the head and wholly within the capsule. The neck and the upper part of the shaft have been drawn a little upwards, and the lower part of the fractured surface and margin of the neck, has been driven tight into the cancellous tissue of the head. In this position, without any lateral displacement, and without any absorption of the neck of the femur, the fractured surfaces have been united by a thin layer of tough fibrous tissue, which permitted them to be slightly moved on one another. The fibrous covering of the neck appears to have been torn across and reunited in front, but to have remained entire behind. All the textures adjacent to the fracture are healthy, but the walls of the bone are thin, and its cancellous tissue atrophied and full of soft fat.

The patient was a very old woman. The fracture occurred about three months before death.

111. A Knee-Joint, of which the patella was dislocated outwards, long before death, and was not reduced. The patella rests on the outer surface of the external condyle of the femur, on which, in adaptation to it, a small articular surface has been formed by a layer of very dense and polished ligamentous tissue. The tendon of the quadriceps femoris lies on the outer side of the femur, and the ligamentum patellæ is directed slightly inwards as well as downwards towards the tibia, which has been rotated outwards following the displacement of the patella. All the

articular cartilages have been more or less deeply removed : the surfaces of the bones are in several places exposed, hard, and polished ; and their margins are nodulated.

112. A right Shoulder-Joint, exhibiting an unreduced dislocation of the humerus of long standing. The head of the humerus, with a great part of its cartilage removed, and its articular surface hardened, rests on the anterior surface of the scapula, with a thick layer of fibrous tissue intervening between it and the bone. It is directly below, and nearly in contact with, the coracoid process, just on the inner side of the glenoid cavity, but not below its level : the axillary artery and plexus of nerves are close to it on its anterior and inner aspect. The *infra-spinatus*, *teres minor*, and *sub-scapularis* muscles are shown retaining their natural connexions with the head of the humerus, A part of the capsule also is shown. The glenoid cavity retains its natural form, but its articular cartilage is thin and has numerous shreds, apparently of fibrous tissue, upon it.

From the same person as the preparation last described. The body was brought to the dissecting rooms, and no history of it could be obtained.

113. Sections of the Tibia of a middle-aged woman, which was fractured through the junction of its middle and lower thirds, sixteen weeks before death. The ends of the two portions overlap each other nearly an inch ; and a firm union of them is effected by new bone, formed between those surfaces, which, in their overlapping, were opposed to, and partly in contact with, each other. No new bone or callus is formed at any other part. The periosteum and the tissues adjacent to the bones appeared healthy, except in having small effusions of blood in them.
114. The Femur of a Fowl, fractured obliquely through the middle of its shaft. The ends of the two portions overlapping, are firmly united by bone formed between them and upon their sides.
115. The Femur and Tibia of a Cat. A fracture of the femur near the middle of the shaft, has been united by bone formed around and between the ends of the overlapping fragments. A small

lead bullet is fixed in the tibia near its head; a fracture in this situation is nearly united, and without displacement, by bone deposited around it.

Presented by Thomas Wormald, Esq.

116. Portion of the Parietal Bone of a Child, on which a sharp piece of a chimney-pot fell from a house-roof. It made a circular aperture in the skull, half an inch in diameter, and forced the bone which was included within this circle into the brain and dura mater. Portions of the bone thus driven in remain attached to the margins of the aperture.

The child remained for three weeks with scarcely any of the usual symptoms of injury of the brain. Inflammation of the brain then ensued, and soon ended fatally.

117. The Femur of a Sheep, fractured long before death through the upper part of its shaft. The fractured surfaces, though adapted to one another, have not united; but new bone is abundantly formed upon and around them.

118. A Shoulder-Joint, in which a dislocation of the Humerus occurred long before death and was not reduced. The head of the humerus rested on the anterior surface of the scapula, and on the anterior margin of the glenoid cavity, just below the coracoid process. Tough ligamentous tissue has been formed on the scapula, beneath the head of the humerus, and a new fibrous capsule surrounded it. The surface of the glenoid cavity is covered by similar fibrous tissue, and that part of the head of the humerus which was in contact with its anterior margin has been absorbed. The tendons of the biceps, supra-spinatus, infra-spinatus, teres minor, and sub-scapularis muscles are all shown retaining their proper attachments.

119. Sections of the upper part of a Femur, in which a vertical fracture occurred through the middle of the neck, within the capsule. The portion of the neck, which was connected with the shaft, is nearly absorbed; the portion connected with the head remains, and its lower margin rests, as on a ledge, on the trochanter minor and the cancellous tissue within it. The

fractured surfaces are united by a thick layer of tough fibrous tissue, permitting a slight degree of motion between them.

120. The external Condyle of a Boy's Humerus, which was completely detached in a compound fracture.

The fracture was repaired without the supervention of any untoward symptoms; and the boy recovered a free power of rotation, and a limited power of flexion and extension, of the arm.

121. An Astragalus, which was removed by operation from a Foot dislocated ten days previously.

The foot was dislocated inwards, and the astragalus, which appeared to be partially separated from its connections with the rest of the tarsus, was carried far forwards and outwards. The dislocation, which was a compound one, but without fracture of the fibula, was reduced; but extensive suppuration followed, and the astragalus, becoming again displaced and presenting itself at an external wound, was removed. Subsequently, a considerable portion of the ligaments connected with it sloughed; but, a month after the injury, the case was making favourable progress.

SUB-SERIES C.

INJURIES OF BONES AND JOINTS: FRACTURES
AND DISLOCATIONS.*The Specimens not contained in Bottles.*

FRACTURES.

Principal examples of the ordinary repair of fractures, c. 3, 7, 10, 16, 19, 20, 23, 25, 61, 63, 68, 74, 81, 82.

Deviations from the ordinary process of repair, in consequence of great displacement, or detachment, of the fragments, or of necrosis or other disease following the injury, c. 2, 5, 14, 17, 21, 29, 58, 59, 60, 77, 91, 92, 93, 98, 106,—

Failure of the process of osseous union, c. 77, 86, 103; and the specimens of the intra-capsular fracture of the neck of the femur.

Fractures of the Skull, c. 43, 44, 45, 94, 111.

Bones of the Face, c. 72, 83, 100.

Ribs, c. 23, 74.

Sternum, c. 46, 47.

Bones of the Pelvis, c. 40, 41, 42, 64, 87, 99, 101?

Clavicle, c. 32, 68, 82.

Scapula, c. 28, 33, 89, 102?

Humerus.

At its upper end, c. 26, 89, 103, 104.

In its shaft, c. 25, 26, 61, 79, 118.

At its lower end, c. 24, 36, 38.

Radius.

In its shaft, c. 29, 30, 62, 73.

At its lower end, c. 31, 35.

Ulna.

In its olecranon process, c. 65.

In its shaft, c. 30, 73, 77, 81.

Bones of the Carpus and Hand, c. 108.

Femur.

Of the neck within the capsule, c. 50, 52, 65, 76, 78?? 105, 105, 112? 113, 115.

Of the base of the neck, c. 49, 51, 53, 54, 56, 57, 67? 95, 96? 117.

Of one or both trochanters, c. 6, 10, 49, 51, 53, 56, 57, 80, 86, 95, 114, 117.

Of the shaft, c. 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 20, 48, 54, 58, 59, 60, 70, 71, 84, 85, 86, 114, 116.

Of the condyles, c. 9, 12, 13, 14, 15, 58?

Fractures of the Tibia.

At the upper end, c. 106.

In the shaft, c. 1, 2, 3, 17, 18, 21, 22, 33, 91, 92, 93, 97, 109, 110.

At the lower end, c. 17, 22, 39, 66, 88, 98, 106.

Fibula.

At the upper end, c. 1, 3, 93.

In the shaft, c. 17, 18, 21, 22, 39, 75, 91, 92, 97, 110.

At the lower end, c. 69, 98, 106, 107.

Bones of the Tarsus, c. 90.

Separation of Symphyses, c. 42, 89, 112?

DISLOCATIONS.

Of the Shoulder, c. 27, 34, 79, 103.

Elbow, c. 37, 77.

Foot, c. 69, 90, 107.

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- c. 1. A Tibia and Fibula. The tibia has been fractured in its middle, and the fibula near its upper end. Both fractures are firmly united, but with displacement and overlapping of the fractured ends, so that the tibia at the seat of fracture forms an angle directed backwards, and the fibula an angle directed outwards. Both the bones also are atrophied, and very slender.
- c. 2. A Tibia, Fibula, and Astragalus. The tibia has been fractured at the junction of the upper and middle thirds of its shaft. Its two portions, displaced laterally, have been firmly united, and the lower portion is enlarged by abundant external deposits of new bone, in which are two apertures, such as probably led to portions of dead bone. The fibula, in adaptation to the altered form of the tibia, to which also it is united by two bridges of new bone, is bent and flattened as in rickets. The lower end of the tibia is united by bone to the astragalus and to the external malleolus.
- c. 3. A Tibia and Fibula. The tibia has been fractured about one third from its lower end, and the fibula near its upper end. Both fragments are firmly and smoothly united, but with a slight lateral displacement, the lower fragments converging in the interosseous space.

- c. 4. A Femur, which has been fractured at the junction of its upper and middle thirds. The fractured ends overlap considerably, the upper portion lying across the front of the lower, and the lower being much rotated outwards. In this position they are firmly united by bone formed between them and at their sides, and their medullary cavity, exposed by the fracture, is covered in by smooth thin layers of compact bone.
- c. 5. A Femur, which has been fractured in the middle of its shaft. The two portions overlap to the extent of between four and five inches, the upper portion lying directly in front of the lower. They are firmly united by bone formed between them and at their sides, and the greater part of the surface of this bone is continuous with the surfaces of the overlapping fragments. A groove along the front of the lower part of the upper portion of the femur marks the healing of a fissure.
- c. 6. A Femur, which has been fractured transversely, immediately above the trochanter minor. The upper portion has been drawn forwards and upwards, and is firmly united to the top of the shaft, forming nearly a right angle with it.
- c. 7. Sections of a Femur, which has been fractured in the middle of its shaft. The two portions overlap considerably, the upper portion lying on the inner side of the lower. The fracture is firmly united by bone placed between and at the sides of the fragments; and the sections show that this bone is composed of cancellous tissue and compact walls, which have almost completely coalesced with the cancellous tissue and walls of the portions of the femur which it unites.
- c. 8. Portions of a Femur, fractured in two places by a wheel passing over the limb. One fracture is about one third from its upper end, and the other at the same distance from its lower end.
- c. 9. Portion of a Femur, which has been fractured transversely through the middle of its shaft, and in which there is an

extension of the fracture downwards through the lower half of the shaft and through the internal condyle.

- c. 10. Portion of a Femur, which has been fractured through the trochanter major and upper part of the shaft. The fracture extends for five inches downwards through the shaft. The two portions of the shaft, though not in contact, have been united by processes of bone extended between the adjacent margins of their walls; and the portions of the trochanter, remaining more nearly in contact, are closely united by bone.
- c. 11. Portion of a Femur, which has been fractured about three inches below the trochanter minor. The fracture was a comminuted one, and the portions of bone have been displaced, so that a considerable angle, projecting forwards, is formed at their union.
- c. 12. Portion of a Femur, which has been fractured in its lower part. The fracture extends transversely through the shaft, and obliquely between the condyles into the knee-joint. The lower end of the shaft is driven in between the displaced and separated condyles.
- c. 13. Portion of a Femur, fractured in its lower part. The fracture extends in several directions through the lower third of the shaft a little above the condyles, and downwards between the condyles into the knee-joint. Several small portions of bone were completely detached.
- c. 14. Portion of a Femur, fractured transversely into many small pieces, just above the condyles. From inflammation in the knee-joint, there has been deep and extensive ulceration of the articular surfaces of the condyles of the femur and the head of the tibia.
- c. 15. Portion of a Femur, fractured in exactly the same manner as c. 13.
- c. 16. Sections of a Femur, which has been fractured about four

inches below its upper end. The fracture is firmly united with some displacement of the ends of the bone, and the walls and cancellous tissue of the two portions have coalesced and become continuous.

- c. 17. Portions of a Tibia and Fibula with the Astragalus. Both the tibia and the fibula were fractured about three inches above the malleolus, and the fracture of the tibia extends downwards into the ankle-joint. The fractures are all firmly united, with little displacement, but with much thickening and induration of the bones, and with osseous union of the tibia and fibula, and of both of them to the astragalus.
- c. 18. Portions of a Tibia and Fibula, the shafts of which were fractured obliquely about three inches above the ankle. The fractures have been firmly united, but with displacement, the lower portion of the tibia having been carried towards the fibula.
- c. 19. Section of a Femur, which has been broken about the middle of its shaft. The two portions have overlapped considerably, and are united in this position. The bone forming the medium of their union has a cancellous texture, with compact walls. The medullary cavity is closed at both the fractured ends of the bone.
- c. 20. A similar specimen.
- c. 21. Sections of a Tibia and Fibula. There has been a compound fracture of both bones about two inches above the ankle. There is a vacancy in the tibia in the situation of the fracture, from which probably a portion of bone has been removed, and at the bottom of which there is a piece of dead bone not yet separated. A portion of the fibula also has necrosed, and is partially separated. The upper and lower fragments of the tibia have not approximated, but are united by a strong bridge, or splint, of bone behind them, and there is a firm and extensive union of the tibia to

the fibula, at and below the seat of fracture. The fracture of the fibula is firmly and smoothly united.

- c. 22. Portions of a Tibia and Fibula. There is a comminuted fracture of the tibia about two inches above the ankle, and two lines of fracture extend downwards into the ankle-joint. The fibula is fractured about four inches above the ankle.
- c. 23. Two Ribs which have been fractured. In one rib the fracture occurred near its middle, and in the other near its angle. There has been very little displacement of the ends of the bones, and the fractures are firmly and smoothly united.
- c. 24. A Humerus, which has been fractured in several directions, but chiefly obliquely downwards, just above the condyles. The fractures are firmly united, but an aperture remains in the line of one of them.
- c. 25. Sections of a Humerus, which has been fractured obliquely just above the middle of its shaft, and has been firmly repaired. The shaft is strongly arched backwards, probably from rickets.
- c. 26. Portion of a Humerus, in which there has been fracture of the upper part of the shaft extending to its neck. The portions have been widely separated, and are firmly, but imperfectly, united by bridges of bone.
- c. 27. A Scapula and Humerus. The head of the humerus appears to have been dislocated forwards, and to have remained long unreduced just beneath the coracoid process, on the anterior surface and neck of the scapula. A concave surface has been here formed, on which the head of the humerus rested. The pressure of the posterior part of the head of the humerus against the anterior margin of the glenoid cavity, has caused them both to be partially absorbed; and the remaining edge of the glenoid cavity, fitting in the recess

in the head of the humerus, forms a kind of new joint between them.

- c. 28. A Scapula, in which there has been a transverse fracture of the acromion through the middle. The fracture was not united by bone, but probably by fibrous tissue; for, though it may be inferred, from the appearance of the bone, that the fracture occurred a considerable time before death, yet the portions do not seem to have moved on each other.
- c. 29. A Radius and Ulna, which have been fractured near their upper ends. The fractures are both firmly united, and a large quantity of new bone has been formed around the seats of union. The surfaces of the new bone on the radius and of that on the ulna, meeting in the interosseous space, have been roughly adapted to each other, but have not coalesced.
- c. 30. A Radius, which has been fractured near the middle of its shaft. The fracture is united with a little overlapping of the ends of the bone.
- c. 31. A Radius and Ulna. The radius has been broken about three quarters of an inch above its lower end. The fracture is united, with the lower portion of bone displaced towards the radial and dorsal aspect of the upper portion. In consequence of the shortening of the radius, induced by this displacement, a new articular surface has been formed on the lower end of the ulna, by the growth of a half-ring of bone upwards from the margin of the surface by which it before articulated with the radius. The carpal articular surface of the ulna thus projects far beyond that of the radius.
- c. 32. A Clavicle, which has been broken near the middle of its shaft. The fracture is united with the scapular end of the bone beneath its sternal end.
- c. 33. A Scapula, which has been broken vertically through its

infra-spinous portion, and, apparently, through the acromion. Both fractures are united by bone.

- c. 34. A Scapula and a portion of the Humerus, exhibiting the same consequences of dislocation of the head of the humerus as are shown in c. 27.
- c. 35. Portion of a Radius, which has been fractured about an inch above its lower end. The fracture has united with a considerable overlapping of the ends of the bone, the palmar margin of the upper portion projecting with a sharp edge towards the palm, while its posterior or dorsal margin is driven into the cancellous tissue of the lower portion. The lower portion with the carpal articular surface of the radius is consequently deflected strongly backwards, or towards the dorsal region of the fore arm.
- c. 36. The Bones of an Elbow-Joint. The humerus has been fractured obliquely between the condyles, and transversely a little above them. The fractures are firmly united, but the internal condyle is flattened and elongated. The articular surface of the ulna is adapted to this altered form of the humerus. It is uncertain whether the ulna has been broken.
- c. 37. The Bones of an Elbow-Joint. The articular surfaces of the humerus and ulna are altered in form; that of the humerus, being narrower, and that of the ulna, deeper than is natural; but there is no appearance of their having been fractured. The radius was found dislocated from the outer condyle, and lying upon the front of the ulna.
- c. 38. The bones of an Elbow-Joint. A fracture extends in two directions through the internal condyle of the humerus into the elbow-joint. The two portions of the condyle separated by the fracture have not been reunited by bone.
- c. 39. Portions of a Tibia and Fibula. The point of the malleolus internus has been separated by fracture. The fibula is broken two inches above its lower end.

- c. 40. An Os Innominatum. A fracture has split the acetabulum into four portions which are widely separated. From the acetabulum, as a centre, fractures also extend through the body and ramus of the pubes; through the ischium between its spine and tuberosity; and through the ilium, vertically to its crest, and obliquely to its anterior spine.
- c. 41. An Os Innominatum. Fracture extends in two directions through the acetabulum. The posterior wall of the acetabulum being separated, and held in its place by only the cotyloid ligament, permitted the head of the femur to pass upwards upon the dorsum of the ilium.
- c. 42. A Pelvis and the lower portion of a Femur, from a Boy fourteen years old. External violence has produced separation of both the sacro-iliac symphyses and of the symphysis pubis. The condyles of the femur have also been separated from the shaft at the line of their epiphytic union.
- c. 43. A Skull-Cap, in which a fracture with depression of the left parietal bone occurred many years before death. The fracture comprised a circle of bone, an inch in diameter, which was starred at its centre and surrounded by a nearly circular fissure. The fracture is united, and the depression still remains; the centre of the depressed portion is nearly half an inch below the level of the contiguous internal surface of the skull.
- c. 44. A Skull, in which there have been two wounds, each about an inch and a half in length, one in the frontal, and the other in the left parietal, bone. They have both been healed.
- c. 45. A Skull-Cap, in which a fracture extending from the middle of the frontal to the posterior part of the right parietal bone has been firmly united.
- c. 46. A Sternum, fractured transversely through its second portion near its union with the first.

c. 47. A Sternum, fractured transversely through its second portion near its junction with the third.

c. 48. Sections of a Femur, in which there has been an oblique fracture of the shaft, extending from an inch below the trochanter minor. The fractured ends overlap considerably, the lower end being drawn upwards in front of the upper. A moderately firm union has taken place between the surfaces of bone which are in contact. The bones are very light.

From a woman sixty-seven years old, who died five weeks after the occurrence of the injury.

c. 49. Portion of a Femur, in which there has been fracture extending through the base of its neck, and obliquely through the base of the trochanter major. The fractured surfaces have firmly united, but the shaft has been drawn upwards and forwards, so that the head and neck of the femur appear much below their natural situation. In this position a bridge of bone has united the base of the head of the femur to the margin of the posterior inter-trochanteric ridge.

c. 50. Portion of a Femur, exhibiting fracture of its neck of which no union has taken place. The neck of the bone is almost completely absorbed, and the surfaces by which the fractured portions were in contact are rough and hard. Deposits of osseous substance have taken place around the base of the head of the femur.

From an old woman, in whom the fracture occurred nineteen years before death.

Presented by J. H. B. Williams, Esq.

c. 51. Sections of a Femur, in which there has been fracture extending through the base of its neck, and through its shaft between the trochanters. There is firm union of the fractured surfaces, with shortening of the neck and an apparent descent of it below its natural situation. The union has taken place with a great accumulation of bone about the lines of fracture.

c. 52. Portion of a Femur, exhibiting fracture of its neck, of which

there is no union. The surfaces of the head, and of the space between the trochanters, which were in contact, are nearly smooth and very hard. Irregular osseous deposits have taken place around the fractured surface of the neck, and upon the head of the bone.

- c. 53. Sections of a Femur, in which, as in c. 49, there has been fracture through the base of its neck, and through the trochanter major. There is a firm union of the fractured surfaces, but with the same displacement as in c. 49.
- c. 54. Portion of a Femur, in which recent fractures extend through the base of the neck, obliquely downwards through the trochanter major, and transversely across the upper part of the shaft just above the trochanter minor.
- c. 55. Portion of a Femur, in which there is a fracture extending vertically through the neck, from the upper margin of the head to the middle of the lower margin of the neck.
- c. 56. Section of a Femur, in which there has been fracture extending through the base of its neck, and through the base of the trochanter minor. The lower margin of the neck is impacted in the cancellous tissue between the trochanters. There is firm union of the fractured surfaces.
- c. 57. Sections of a Femur, in which there has been fracture extending obliquely through the trochanter major and the base of the neck into the posterior part of the shaft. There is a firm union of the fractured surfaces, but the two portions of the trochanter major are separated to some distance from each other.

The patient was a woman sixty years old. After a fall on her hip, she had signs which led to the suspicion of dislocation of the head of the femur; for the posterior portion of the fractured trochanter major, being drawn backwards towards the ischiatic notch, felt like the head of the bone. She died about three years after the accident. The case is described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. xiii. p. 505, London, 1825. Case-Book, Vol. i. p. 74, No. 115.

- c. 58. The bones of a Knee-Joint. There has been a transverse

fracture through the shaft of the femur, immediately above the condyles. The upper end of the bone, protruded downwards into the popliteal space, has, in this position, become firmly and extensively united to the condyles. There is a complete osseous ankylosis of the patella to the femur, and of the condyles of the femur to the head of the tibia.

- c. 59. A Femur which has been fractured near the junction of its upper and middle thirds. The ends have overlapped, the upper portion uniting to the front of the lower, with a large accumulation of bone at their sides, from which also many pointed processes have arisen. There is a small flat growth of bone on the lower and posterior part of the shaft of the femur.
- c. 60. Sections of a Femur fractured near the middle of its shaft. The ends of the bone have overlapped, the upper portion uniting to the front of the lower. Strong pointed osseous growths project from the surface of the bone by which the fracture is repaired. The sections show that the bone by which the fracture is united is formed entirely between the adjacent surfaces of the overlapping portions.
- c. 61. Sections of a Humerus, which has been fractured rather below the middle of its shaft. The ends of the bones have overlapped, and the lower portion is united by intermediate bone to the anterior surface of the upper one. The exposed medullary tube is, in both portions, smoothly covered in by a layer of compact bone.
- c. 62. A Radius and Ulna. The radius has been fractured at the middle of its shaft. The ends of the bone, projecting forwards and inwards close to the ulna, have been smoothly united in this position.
- c. 63. Section of a Femur, which has been fractured near the middle of its shaft. The ends of the bone have overlapped; the upper portion uniting to the inside of the lower.

The other section, showing the characters of the uniting medium, is preserved in Series III. No. 98.

- c. 64. The Bones of a Hip-Joint. A fracture extends in several directions through the os innominatum. The fracture through the bottom of the acetabulum permitted the head of the femur to sink into the cavity of the pelvis.

These injuries were the effects of a fall from a considerable height.

- c. 65. The Bones of an Elbow-Joint, exhibiting a recent fracture of the lower part of the olecranon, extending to the interior of the joint.
- c. 66. Bones of an Ankle-Joint, exhibiting a double fracture of the internal malleolus, separating it from the tibia, and splitting it into two portions.
- c. 67. Portion of a Femur, in which a fracture is believed to have occurred, many years before death, through the base of its neck. The fracture (if one happened) has been completely repaired; for its direction is not indicated by any line in the cancellous texture.

Presented by F. Salmon, Esq.

- c. 68. A Clavicle, which has been fractured obliquely near the middle of its shaft. The fracture has united, with scarcely any irregularity of the surface of the bone.
- c. 69. A Foot, with parts of the Tibia and Fibula, exhibiting the effects of dislocation and fracture ten months before death. The tibia is dislocated inwards, and partially separated from the fibula: the internal malleolus projects an inch on the inner side of the astragalus. The astragalus also is partially separated from the navicular bone. The fibula has been broken into several portions just above the malleolus. These portions are firmly re-united, and there is an accumulation of bone both before and behind the articulation between the tibia and the fibula.

The patient was a lunatic forty years old. The dislocation was not reduced till a month after its occurrence, and the patient's restlessness prevented the tibia from being maintained in its proper place; but he finally regained complete use and power of the foot. The case is described by Mr. Lawrence in the *Medico-Chirurgical Transactions*, Vol. xvii. p. 58. London, 1832.

- c. 70. A Femur, the shaft of which has been fractured very obliquely, from before backwards and from above downwards, a little below the trochanter minor. The fracture is firmly united, with the upper portion of the bone projecting backwards, behind and to the outer side of the lower portion.
- c. 71. Portions of a Femur, exhibiting the union of a complicated fracture in the upper part of its shaft. The principal fracture appears to have extended obliquely downwards from the trochanter minor. The fracture is firmly united, the upper fragment lying in front of the lower. The cancellous texture of the bone is continuous in the united fragments.
- c. 72. Portion of a Skull, in which there has been a fracture extending across the ossa nasi. The fracture has firmly united, but with lateral displacement and overlapping of the lower portions of the bones.
- c. 73. A Radius and Ulna, both of which have been fractured about three inches above their carpal ends. The ends of the bones overlapping have united in this position, with a considerable shortening and deflection towards the ulnar side.
- c. 74. A Rib which has been fractured in three distinct situations—at the angle, and in the middle of the shaft. The fractured ends are firmly united in nearly exact apposition.
- c. 75. Section of a Fibula, in which there has been a comminuted fracture about two inches above its lower end. A fragment of bone, which was separated, is firmly united to the external surface of the upper and lower portions of the shaft. The fractured ends of the shaft are not yet united; but the fragment just mentioned, being united to both, holds them together.
The fracture occurred five weeks before death.
- c. 76. Portion of a Femur with the Acetabulum, exhibiting a fracture of the neck of the femur, which occurred fifteen years before death. The neck of the bone is absorbed. The

opposite surfaces of the head and shaft, which have been in apposition, are covered by a layer of hard osseous substance. There is a considerable deposit of new bone at the bottom of the acetabulum, and upon the head of the femur.

The signs of fracture of the neck of the femur were not presented till six weeks after the injury, and two weeks after the patient had begun to walk on crutches.

Presented by Thomas Wormald, Esq.

- c. 77. The bones of an Elbow-Joint, exhibiting the effects of dislocation and fracture, which occurred many years before death, and which were followed by long-continued inflammation of the bones. The head of the radius has been dislocated forwards. The shaft of the ulna has been broken a little below the olecranon. The head of the radius, misshapen, elongated, and flattened, appears to have rested and moved obliquely across the front and outer part of the lower end of the shaft of the humerus. A cavity is here formed on the humerus, to which the head of the radius fits; and their opposed surfaces are covered by hard, ivory-like, polished, and perforated bone. The fractured surfaces of the ulna, not uniting, have moved freely upon each other, the upper portion resting in a deep pit on the lower. All the bones are enlarged, and the radius and ulna are united by bone abundantly formed between them and upon their surfaces.

Presented by Dr. Hooper.

- c. 78. Portion of a Femur, exhibiting a depression and shortening of the neck, with flattening of the head, and formation of bone around its margin.

From an aged person. It was believed, from the circumstances of the case, that the neck of the femur had been fractured in a fall; but there are no indications of a fracture having been united.

Presented by Thomas Warner, Esq.

- e. 79. A Humerus and Scapula, exhibiting dislocation which occurred a considerable time before death. The head of the humerus was displaced upwards and backwards upon the dorsum of the scapula. Its anterior margin rested against the inferior surface and the outer edge of the spine of the scapula, in which

situation a hollow and partly polished surface has been formed in adaptation to it. The neck of the humerus moving upon and across the inferior half of the glenoid cavity and the adjacent part of the lower border of the scapula, their opposite surfaces are here accurately adapted and highly polished: the surface of the scapula is at this part become broad and convex, while that of the humerus is deeply hollowed out. The lower part of the glenoid cavity has disappeared, being comprised in the new joint formed with the neck of the humerus. The head of the humerus is altered in its form by the irregular deposit of bone on its surface: the upper half of the glenoid cavity also is flattened and nodulated. A fracture through the middle of the shaft of the humerus has been firmly united, but with an angle directed outwards.

A cast-of this shoulder, before the removal of the soft parts, No. 76.

- c. 80. Portion of a Femur, in which a fracture extends almost vertically through the trochanter major and five inches downwards to the front of the shaft. The portions are firmly united, but with considerable interspaces, and with projection of the upper portion forwards.
- c. 81. An Ulna, in which a fracture through the middle of its shaft has been exactly united, but with a small sharp process of bone growing from its outer side.
- c. 82. Section of a Clavicle, in which an oblique fracture through the middle of the shaft, has been exactly united.
- c. 83. Section of a Skull, in which there has been a transverse and comminuted fracture of the ossa nasi. The fracture is united, with considerable lateral displacement of the lower portions of the bones.
- c. 84. A Femur, which was fractured through the middle of its shaft. The fracture is firmly and smoothly united, with the upper portion of the bone projecting slightly forwards, and the lower portion rotated outwards.

c. 85. Sections of a Femur, in which a fracture extends transversely through the shaft immediately below the neck. The lower portion has been drawn upwards and backwards, so that its upper end is on a level with the trochanter major : and in this position it is firmly united by bone to the back of the trochanter and of the base of the neck.

c. 86. Portions of a Femur, in which there has been a fracture through the shaft, a little below the neck, with separation of the trochanter minor. The fracture, which is in almost exactly the same position and direction as that last described, was united by ligamentous substance which separated in maceration.

The two preceding specimens were taken from a man aged thirty-nine. The fracture c. 85. occurred six years before death : the fracture c. 86. nine months before death.

c. 87. Section of the Ossa Pubis of an adult, exhibiting a fracture of one of the descending rami, which has been firmly united, but with displacement of the fragments.

c. 88. Portions of a Tibia and Fibula. Fractures extend in several directions, through the shaft and the articular end of the tibia, into the ankle-joint. The fibula also is fractured through the base of the malleolus.

c. 89. A Scapula, with part of the Humerus, from a young person. Fracture extends through the body of the scapula, and through the base of the coracoid process. There is also a separation of the head from the shaft of the humerus in the line of the epiphytic union.

c. 90. The Foot of a Child, exhibiting a partial dislocation of the astragalus from the os calcis, together with a fracture of the superior and anterior margin of the latter bone.

The leg was amputated in consequence of other injuries received, together with this, in the passage of a carriage-wheel over the leg and foot.

c. 91. Sections of a Tibia and Fibula, fractured through the middle of their shafts ; the fractures are consolidated. There is also

lateral union of the two bones, and an abundant deposit of new bone above and below the seat of fracture.

- c. 92. Parts of a Tibia and Fibula, in which a compound fracture through the middle of their shafts occurred two years before the amputation of the limb. The several portions of bone, displaced and overlapping, are firmly consolidated by osseous substance deposited between their contiguous and lateral surfaces. The small separate portion of the Tibia was found loose in the cavity of the bone by the side of which it is now placed. Besides the fractures in the central parts of the tibia and fibula, there are fractures running transversely and obliquely through the outer malleolus of the fibula, which have been united by bone.
- c. 93. Sections of a Tibia and Fibula, from a limb in which compound fracture occurred six months before death. The tibia is broken about one third from its upper end; and its two portions, separated to some distance from each other, are held together by new bone abundantly deposited around their external surfaces. The separate fragments of bone were found loose in the osseous cavity between the ends of the fractured portions. A small detached portion of the wall of the tibia has also been driven into the cancellous tissue of the upper part of the shaft, in which it now lies firmly imbedded. The fibula is fractured two inches below its head; the two portions overlap each other considerably, and are united by a bridge of osseous matter extending obliquely between their lateral surfaces.
- c. 94. A Skull, in which there has been a comminuted fracture in the squamous portion of the right temporal bone, from which, also, a fracture extends through the meatus auditorius externus and base of the petrous portion to the base of the skull, and nearly as far as the margin of the foramen magnum. The several portions of the squamous bone which were insulated by the fracture, are firmly re-united, but with narrow intervals remaining between them: the fracture through the base is similarly united.

- c. 95. Portion of a Femur, in which there has been a fracture extending through the base of the neck, and very obliquely through the trochanter major, which is split into two portions separated to some distance from each other. The fracture is firmly and smoothly united; but the trochanter is drawn up above the level of the head of the bone.

Presented by H. B. Oakes, Esq.

- c. 96. Portion of a Femur, in which there appears to have been a fracture extending vertically through the base of the neck. The fracture has been completely repaired; but with such a displacement of the head and neck, that they form a right angle with the shaft, and are depressed below the summit of the trochanter major.

Presented by H. B. Oakes, Esq.

- c. 97. A Tibia and Fibula, fractured through the middle of their shafts. The fractures are firmly united, but with displacement of the portions, so that in each bone there is a considerable angle directed inwards.

- c. 98. Portions of a Tibia, Fibula, Astragalus, and Os Calcis, from a limb in which compound fracture of the lower ends of the tibia and fibula occurred two years previous to amputation. There is an abundant deposit of osseous substance around the fractured portions of the tibia and fibula. Two portions of bone, one belonging to the articular end of the tibia, the other comprising all that remained of the astragalus, were found loose in the cavity of the ankle-joint, and in a deep ulcerated cavity in the lower end of the tibia. The small portion of the os calcis which remains, retains but little of the natural form of the bone.

- c. 99. An Os Innominatum, in which there appears to have been a fracture of the ramus of the ischium near the tuberosity. New bone is formed around the supposed seat of fracture.

- c. 100. Part of a Skull, in which a depression of the zygoma into the temporal fossa appears to indicate that there has been

fracture near the junction of its malar and temporal portions.

c. 101. Section of a Sacrum, in which there appears to have been a transverse fracture of its lower extremity immediately above the coccyx. A layer of new bone is formed over the supposed line of fracture.

c. 102. A Scapula, in which there appears to have been a fracture of the lower margin of the glenoid cavity.

c. 103. A Scapula and Humerus, in which there has been a dislocation of the head, with a fracture of the neck, of the humerus. The head of the bone was found resting against the anterior border and concave surface of the scapula, close to the glenoid cavity, and below the coracoid process. A deposit of osseous substance, forming a hollow articular surface, has taken place upon the scapula in this situation. The fracture of the humerus occurred immediately below the base of its head, between it and the tuberosities, and it had been united by fibro-cartilaginous substance, which was removed in maceration.

These injuries were the consequence of a fall upon the shoulder, about three months before death. The patient was a man upwards of fifty years of age.

c. 104. Bones of a Shoulder-Joint, exhibiting a fracture through the shaft of the humerus, just below the tuberosities.

c. 105. Portions of a Femur, of which the neck was fractured, near the margin of the head, many years before death. The remains of the neck have been nearly absorbed. The fractured surface of the head is adapted to the surface of the short portion of the neck which remains between the trochanters, and to a growth of bone proceeding from it downwards. Both the surfaces thus adapted are very hard, polished, ivory-like, and penetrated by numerous foramina.

c. 106. The Bones of a Leg, exhibiting the effects of a compound

fracture of both of them near the ankle, and of a simple fracture of the tibia near the knee-joint. Near the ankle, the fractured portions are irregularly united at a right angle with each other, the lower portions being turned inwards. In the lower part of the tibia there is a large irregular cavity, communicating both externally and with the joint, in which cavity several loose pieces of bone were contained. The upper part of the shaft of the fibula has not united with the lower part, but the latter is firmly fixed to the tibia. The fractured portions of the head of the tibia are firmly, but irregularly, united.

These injuries were the consequences of an accident which occurred a year before amputation.

c. 107. The lower extremities of the Tibia and Fibula, with the Foot of an elderly woman, exhibiting the effects of an injury which occurred several years before death. The tibia is dislocated inwards, so that only the outer half of its articular surface is in apposition with the astragalus. There has been a comminuted fracture, extending in various directions through the lower end of the fibula and the adjacent margin of the tibia. The separated portions of bone have been completely re-united.

c. 108. Bones of a Carpus and Metacarpus. The lower head of the metacarpal bone of the thumb has a widely expanded and flattened surface, by which it articulated with a similarly deformed surface on the trapezium.

It is probable that these changes were the consequences of a fracture of the metacarpal bone extending into the joint.

c. 109. A Tibia, which was fractured very obliquely through the middle of its shaft. The fractured portions are firmly united, and so exactly, that on the posterior aspect of the bone the line of fracture is not discernible. The shaft in the neighbourhood of the injury is thickened, and new bone is deposited on many parts of its surface.

c. 110. A Tibia and Fibula, which were fractured somewhat obliquely near the middle of their shafts. The several por-

tions are firmly united, but with lateral displacement, both the upper fragments being placed on the inner side of the lower ones. The fractured ends are rounded and continuous with the bonds of union. A long narrow process of bone projects from the end of the upper portion of the fibula.

- c. 111. The upper part of a Skull, with a depression of a small oval portion of the right side of the frontal bone, from a fracture received a long time before death. Both the surfaces and the margin of the depressed part are smooth; but on the inner surface are traces of a starred fracture of the inner table.
- c. 112. The upper part of a Femur, and sections of an Os Innominatum. On the upper part of the shaft of the femur there are no remains of the head or neck; but between the trochanters is a large and slightly convex surface, increased by broad flat growths of bone from its sides. The cavity of the acetabulum is nearly filled up; there remains only a slight concavity adapted to the surface between the trochanters. The notch of the acetabulum, and the space at which the vessels entered, remain distinct. The form of the osseous substance by which the acetabulum is filled up, makes it probable that it is the head of the femur which was separated, while it was still in the state of an epiphysis, and was united by bone to the walls of the acetabulum.

This supposition is made more probable by the history of the case. The patient was a woman, sixty years of age, who, when she was eight years old, had a fall on her hip, and was believed to have fractured her thigh. Her limb was always shortened afterwards; but she had never had abscesses, or any other sign of ulcerative disease of the hip-joint.

Presented by Henry James, Esq.

- c. 113. The upper part of a Femur, fractured at the junction of the head and neck a fortnight before death. The portion of the neck which remains attached to the shaft is much reduced in size, so that it no longer corresponds to the other fractured surface.

There was no shortening or eversion of the limb in this case. The edge of the fractured neck rested against the edge of the acetabulum.

- c. 114. A Femur, which sustained a comminuted fracture just below the trochanters. The fragments are united, with considerable displacement, by several short bridges of bone extending between them. The shaft of the femur is completely everted; the condyles are directed straight outwards; and the upper fractured end of the shaft lies behind the great trochanter.

Presented by J. F. Crookes, Esq.

- c. 115. Portions of a Femur, which was fractured vertically through the neck, at the base of the head, a few weeks before death. The plane of fracture is irregular and the fragments were locked together: so that the principal indications of fracture were absent.
- c. 116. Portions of two Femora. The larger portion, comprising the head, neck, and upper half of the shaft of the left femur, exhibits the effects of two fractures which were produced at different times by very slight forces. The first fracture, which occurred about two inches below the lesser trochanter, is firmly united, but in such a manner that the two portions form an angle of about 75° . The second fracture happened a few days before death; it passes transversely, but very irregularly, through the shaft of the bone. The smaller portion, consisting of a section of the right femur, exhibits an exactly similar union of a fracture like that which first occurred in the left thigh. The rest of this bone is preserved in the 1st Series, No. 92. The texture of the bones is soft, light, and spongy, and infiltrated with fatty matter.
- c. 117. The upper part of a Femur, in which a fracture extends obliquely downwards and inwards, from the middle of the great trochanter through the base of the neck, and ends just above the lesser trochanter. There is no union of the fragments; but they are held together by portions of the periosteum.

From a man eighty-two years old, who died a fortnight after the injury, which was produced by a fall on the floor. The limb directly after the

fracture was shortened about half an inch, and was inverted, the toe resting on the opposite instep. It was moveable and could be everted, but, of itself, it became again inverted.

Presented by Charles Miles, Esq.

- c. 118. The Humerus of a Horse, fractured in an oblique plane from one end of the shaft to the other ; but, apparently, without implicating either of the articulations. The fracture is firmly united by bone placed between the apposed fractured surfaces.

SERIES IV.

INJURIES AND DISEASES OF THE SPINE.

Fracture and dislocation of the vertebræ, 1, 2, 3, 4, 5, 6, 7, 9, 10, 11.

Dislocation of the vertebræ without fracture, 8, 12, 13.

Formation of new bone on the vertebræ, 25, 32, 35.

Osseous union (Anchylosis) of the vertebræ, 26, 27, 28, 29, 30, 32.

Ulceration of the bodies of the vertebræ, 14, 15, 16, 18, 19, 21, 24, 25, 33, 34, 37, 38.

Healing and union of the ulcerated parts, 17, 23, 26, 28, 33, 35, 36.

Softening and removal of the intervertebral ligaments, independent of, or preceding, the disease of the bones, 20, 31, 34?

Ulceration of the arches and processes of the vertebræ, 22.

Absorption in consequence of pressure, Series I., 55, 156; and Series XIII., 39, 48, 58.

Angular Curvature, 21, 16, 14, 15, 37, 31, 34, 23, 36, 17, 35.

Tumours, and cancerous diseases, involving vertebræ, Series I., 115, 190.

Disease affecting principally the cervical vertebræ, 19, 22, 24, 26, 27, 28, 29, 30, 32, 33, 34, 38.

” ” dorsal, 14, 15, 16, 17, 20, 21, 23, 35, 36, 37.

” ” lumbar, 18, 25, 31.

1. Section of a spine, in which there is fracture of a dorsal vertebra, either the third or the fourth. The front of its body is crushed between the vertebræ above and below it, and the posterior part has been driven backwards into the spinal canal, and has completely divided the chord. The spinous and articular processes of the fractured vertebræ are torn away from those of the vertebra above it, leaving a wide gap at the posterior part of the spinal column.

2. Portion of a Spine, in which the articular processes of the fifth and sixth cervical vertebræ are dislocated, and the right articular process and body of the sixth are broken. The intervertebral ligament between the fifth and sixth vertebræ is also completely torn across. The spinal chord has been divided along its middle, for the purpose of showing the softening and laceration of its substance opposite the injured vertebræ, and especially in the line opposite the division of the intervertebral ligament.
 3. Portion of a Spine, in which there is dislocation of the articular processes of the fourth and fifth cervical vertebræ, with fracture of the lower edge of the left inferior articular process of the fourth, and a separation of the intervertebral ligaments uniting the bodies of the fourth and fifth, and of the fifth and sixth.
 4. Section of a Spine, in which there is fracture of the body of the sixth cervical vertebra. The middle and fore part of the body is crushed between the two adjacent vertebræ; and its posterior part is pressed backwards into the spinal canal, so that the spinal chord must have been nearly divided. The spinous process of the vertebra retains its natural position.
- Presented by Henry Earle, Esq.
5. Portion of a Spine, in which there is dislocation, with fracture of the edges of the articular processes, of the sixth and seventh cervical vertebræ. The body of the sixth cervical vertebra is separated from the intervertebral ligament below it, and projects in front of the seventh.
 6. Portion of a Spine, in which there is an extensive comminuted fracture of the arches and bodies of the fifth, sixth, and seventh cervical, and first dorsal, vertebræ.
 7. Portion of a Spine, in which the right half of the posterior arch of the atlas has been completely detached by fracture.

8. Portion of a Spine, in which there is complete dislocation of the bodies and articular processes of the fifth and sixth cervical vertebræ, without any fracture.
9. Portion of a Spine, in which there is dislocation of the bodies and articular processes of the fourth and fifth cervical vertebræ, with fracture of the upper margin of the body, and of the arch, of the fifth. The body of the fourth vertebra projects in front of the fifth, and the membranes of the spinal chord appear tense and compressed beneath it.

It is necessary to observe, that the fissures upon the arches of the vertebræ, on each side of the spinous processes, were made by the saw in opening the spinal canal.
10. Portion of a Spine, in which there is dislocation of the bodies and articular processes of the fifth and sixth cervical vertebræ, with fracture of the articular processes of the fifth. The articular processes of the fifth are raised up from those of the sixth, but have not passed to the front of them. The posterior part of the intervertebral ligament appears to have been deeply torn.
11. Portion of a Spine, in which there is dislocation of the bodies and articular processes of the fifth and sixth cervical vertebræ, with fracture of the body of the sixth. The right inferior articular process of the fifth has passed to the front of the right superior process of the sixth; the corresponding processes on the left side more nearly retain their places, so that the upper part of the spine is twisted round towards the left side.
12. Sections of a Spine, in which there is a complete dislocation of the bodies and articular processes of the fourth and fifth cervical vertebræ, without any fracture. The fourth vertebra is carried forwards, so that the posterior margin of its body rests on the anterior margin of the body of the fifth, and the apex of its spinous process rests on the base of the spinous process of the fifth.

The patient, a robust man, twenty-two years old, fell with a heavy weight on his head and the upper part of his neck. He was immediately deprived of all sensibility in the trunk and limbs, and of all power over the voluntary muscles of

those parts. He died three days and a half after the fall. The case is described by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, Vol. xiii. p. 394, London, 1825. Case-Book, Vol. i. p. 71, No. 112.

13. Portion of a Spine, in which there is a complete dislocation of the articular processes of the sixth and seventh cervical vertebræ, and a partial dislocation of their bodies, without any fracture. The right half of the intervertebral substance is torn through; the left half is nearly entire. The articular processes of the sixth vertebra were raised up above those of the seventh, but had not passed to the front of them.

The patient fell, from a height of about sixteen feet, on his head, and his neck was bent by the weight of his body. He lost all sensibility and power of voluntary motion in the trunk and limbs, and died on the third day after the fall.

14. Section of a Spine, with Angular Curvature. The disease is situated in the middle of the dorsal region of the spine; and large portions of the bodies of two vertebræ are destroyed by ulceration. A soft caseous matter is deposited around the diseased bone, and is so abundant in front and at the side of the spine, that it elevates the periosteum of the vertebræ and the pleura costalis in the form of a tumour within the chest. A small piece of bone is separated from the rest by ulceration, and is imbedded in the caseous matter behind the ulcerated vertebræ. The medulla spinalis, for the space of an inch and a half, is compressed in the situation of the curvature.

The patient was under the care of Mr. Pott, and had paraplegia and other signs of "Pott's disease" of the spine and spinal chord. It was one of the first cases which showed the benefit of issues in the treatment of the disease; for under their influence, the paraplegia and other symptoms were completely removed, and the patient recovered so as to walk with ease. He died with phthisis, and a portion of one of his lungs is preserved in Series XIV. No. 6. Case-Book, Vol. i. p. 6, No. 14.

15. Section of a Spine, exhibiting disease in three of the bodies of the lower dorsal vertebræ, which was in progress towards its cure. A large portion of the anterior and lower half of the body of one vertebra has been removed, probably by ulceration like that shown in the preceding specimen. The intervertebral ligaments above and below this have also been removed: the adjacent vertebræ are approximated, so that their anterior

margins are nearly in contact and are partially united by bone ; and there is considerable angular curvature of the spine. The remains of the body of the vertebra which is principally diseased, and the bodies of the vertebræ above and below it, are denser and harder than is natural, and are of a yellow colour. The spinal chord is curved, in correspondence with the curvature of the spine, but is not compressed.

The patient was a lad seventeen years old. After signs of the disease had existed for two years he had paraplegia. Issues were made near the diseased part of the spine, and he recovered sufficiently to pursue his work as a farmer's boy. But, by a fall on his back, acute inflammation of the spinal chord, which appeared to extend to the brain, was excited ; and thus he died. Case-Book, Vol. i. p. 7, No. 15.

16. Section of a Spine, in which the bodies of two of the lower dorsal vertebræ are nearly destroyed by ulceration. Their remains are soft and crumbling, and the intervertebral substance is removed. There is a deposit of caseous matter around the diseased bone, elevating the periosteum of the bodies of the vertebræ and the pleura costalis to a considerable extent above and below the chief seat of the disease.
17. Portion of the Spine of a Child, exhibiting the process of cure after such disease as is shown in the three preceding specimens. The bodies of four of the lower dorsal vertebræ are destroyed ; and the anterior parts of the bodies of the vertebræ which were immediately above and below the situation of the disease, are approximated and firmly united by bone. Together with the angular curvature thus produced, there is some lateral displacement of the bodies of the vertebræ ; but, by the separation of the arches of the diseased vertebræ, the spinal canal, though changed in form, appears to have retained its natural size.
18. Section of a Spine, exhibiting apparent deficiency of medulla in the cancellous texture of the bodies of three lumbar vertebræ, with ulceration commencing in their internal and posterior parts. The bones are of their natural hardness. All the other vertebræ of this spine were similarly altered.
19. Portion of a Spine, in which the bodies of the second and third

cervical vertebræ are ulcerated. The remaining bone is softened and yellow. The odontoid process has been completely separated at its base from the body of the second vertebra.

20. Section of a Spine, exhibiting disease in the dorsal and lumbar vertebræ. The disease consists in an alteration of colour in the bone, apparently from morbid secretion into the cancellous texture. Between two of the lower dorsal vertebræ, the intervertebral substance is completely destroyed, and the adjacent surfaces of the bodies of those vertebræ are slightly ulcerated.
21. Section of a Spine, in which the adjacent parts of the bodies of two dorsal vertebræ are altered in structure and deeply ulcerated. A portion of the diseased bone has been separated and protruded forwards. The intervertebral substance between the two diseased vertebræ is completely absorbed. An abscess has formed by the side of the diseased portion of the spine, but it has no communication with the ulcerated bone.
22. Portion of a Spine, exhibiting ulceration in the back parts or arches of the vertebræ. The left halves of the arches of the fifth, sixth, and seventh cervical vertebræ are almost completely destroyed. A portion of the ulcerated bone has become separated, and has pressed upon the spinal chord. The remaining portions of the bones are of their natural texture.
23. Section of a Spine, exhibiting the process of reparation after extensive disease. Twelve spinous processes are shown in the preparation, but the bodies of only four vertebræ; eight bodies, therefore, have been destroyed. The vertebræ above and below these eight have been approximated, and are firmly united by bone with their remains and with one another. An extremely acute angular curvature is thus produced; but the spinal chord has suffered no pressure; it has adapted itself to the alteration in the direction of the spinal canal.
24. Portion of a Spine, exhibiting ulceration of the posterior sur-

faces of the bodies of the cervical vertebræ, from the second to the fifth, and more superficial ulceration of their anterior surfaces, with deposits of new bone.

25. Portion of a Spine exhibiting ulceration, with deposit of new bone, upon the anterior surfaces of the bodies of the lower lumbar vertebræ,—such disease as often exists with lumbar abscess.
26. Portion of an Occipital Bone, with the three uppermost Cervical Vertebræ. The occipital bone and the anterior half of the atlas are firmly and completely united by bone. The second and third vertebræ are similarly ankylosed at their articular processes. These changes seem to have followed ulcerative disease, by which the odontoid process and the body of the second vertebra were changed in structure, and in part removed.
27. Portion of an Occipital Bone, with the Atlas. The atlas is united to the occipital bone by new bone formed abundantly around their articulations. The atlas is also displaced towards the left side, and its right half projecting within the foramen magnum considerably diminishes the size of the aperture.
28. Second and Third Cervical Vertebræ, firmly united by bone which has been, chiefly, formed round their articulations. Part of the odontoid process has been destroyed by ulceration.
29. Second and Third Cervical Vertebræ, exhibiting a complete bony union of their bodies, articular surfaces, and spinous processes, without any displacement or change of structure.
30. A similar specimen.
31. The dorsal and lumbar portions of a Spine, from a young person, exhibiting a nearly complete destruction of the intervertebral ligaments in the whole extent of the column, with ulceration of the bodies of the vertebræ. The bodies of several of the lumbar vertebræ are completely destroyed, and an angle is here

formed by the approximation of the upper and lower parts of the column and the projection of the spinous processes. In the dorsal vertebræ the ulceration is superficial, though the intervertebral ligaments are very deeply destroyed. The bone in progress of ulceration is not softened or otherwise changed in its apparent texture.

32. The cervical portion of a Spine, in which the second, third, fourth, and fifth vertebræ are united by bone. The bone uniting them forms a broad smooth layer covering the front surface of their bodies. Similar formations of bone are seen upon the front surfaces and margins of the sixth and seventh vertebræ, and these show that the union of each two adjacent vertebræ is effected by the growths of bone from their adjacent margins extending over the front of the intervertebral substance, and then coalescing; for in these vertebræ the growths from their several margins have met and are adapted, but not united, to each other.
33. Portion of an Occipital Bone, with the first and second cervical vertebræ. There is a nearly complete osseous union of the two vertebræ, and the odontoid process appears to have been superficially ulcerated. The anterior arch of the atlas exhibits a line of fracture; but it does not appear probable that the ankylosis of the vertebræ was the consequence of the fracture.
34. The upper half of a Spine, in which the bodies of the fifth and sixth cervical vertebræ are completely, and those of the fourth and seventh are partially, destroyed by ulceration. The intervertebral ligaments between these vertebræ, as well as those between the first four dorsal vertebræ, are completely destroyed, and the bodies of the dorsal vertebræ are superficially ulcerated. There is angular curvature in the lower part of the cervical region, and the remains of one of the bodies of the vertebræ projects far into the spinal canal.

From a child ten years old. There was a large collection of matter in front of the spine pressing in the pleuræ.

Presented by J. G. Perry, Esq.

35. Part of the dorsal portion of a Spine. The anterior half of the body of the seventh dorsal vertebra is almost entirely destroyed by ulceration, and the body of the sixth is deeply ulcerated on its anterior surface. By the approximation and union of the sixth and eighth vertebræ, an angular curvature of the spine has been produced. A small rough process of bone has grown from the most prominent part of the angle into the spinal canal. Opposite to this projection the spinal chord was softened, and reduced in size. See Series VII. No. 7.
36. Section of a part of a Spine, including the last six dorsal and the first three lumbar vertebræ. In consequence of disease, probably such ulceration as is shown in the preceding specimen, there has been a considerable loss of substance in the bodies of the last three dorsal vertebræ, and their remains have united at a very acute angle. The osseous substance in the situation of this union is hard and dense. The intervertebral cartilages in the same situation are reduced in thickness; that between the eleventh and twelfth dorsal vertebræ is wholly removed, and that between the first and second lumbar vertebræ has yielded, so as to leave a deep gap between the bodies of those bones. The vertebral canal behind the angular curvature is not narrowed, nor is the medulla spinalis in any degree compressed, though drawn close over the angle in the front wall of the canal.
- From a lad, who died with lumbar abscess.
37. Section of the dorsal portion of a Spine, in which the anterior parts of the bodies of four vertebræ are ulcerated. A large portion of one of the vertebræ, including one of its intervertebral cartilages, is destroyed, and angular curvature has been produced. The remaining osseous tissue appears healthy. The periosteum, thickened, indurated, and united with the pleura, is separated from the surfaces of the diseased vertebræ.
38. Section of the upper part of the Spine, of the Occipital Bone, and of the spinal chord, of the patient from whom the specimen last described was taken. The connections of the second

cervical vertebra, with the first, and with the occipital bone, having been destroyed, apparently by ulceration, the anterior portion of the first vertebra, and the basilar portion of the occipital bone have sunk down, so that the lower margin of the first vertebra is within a line of the upper margin of the intervertebral substance between the second and the third; and the whole of the odontoid process of the second projects straight upwards into the cavity of the skull. The medulla oblongata is thus lifted up and stretched over the apex of the odontoid process; and, as the pons holds its connection with the basilar portion of the occipital bone, the axis of the medulla oblongata forms a right angle with the axis of the spinal chord. The displaced bones are held together by the thickened and consolidated adjacent tissues. Their texture appears indurated, but not otherwise diseased.

The patient was a woman thirty-two years old. The most prominent sign of the disease, which was of four years' duration, was a constant acute pain at the back of the neck, just below the occiput. She had some difficulty of swallowing, and used to sit with her chin on her hand, or resting on her sternum. But she suffered no loss of sensibility, and was able to walk on the day before her death.

Presented, with the preceding specimen, by John Avery, Esq. Case-Book, Vol. i. p. 182, No. 205.

SUB-SERIES D.

INJURIES AND DISEASES OF THE SPINE,
INCLUDING ALSO THE PRINCIPAL SPECIMENS OF DISTORTIONS
OF THE CHEST AND PELVIS.

The Specimens not contained in Bottles.

- Fractures and dislocations, D. 1, 2, 3, 4, 5,—
 Formation of new bone on the vertebræ, D. 6, 9, 12, 20, 24, 31, 32, 33.
 Osseous union (Anchylosis) of the vertebræ, D. 6, 7, 8, 9, 10, 12, 31, 33, 35.
 Abscess, D. 10?
 Ulceration, D. 11, 13, 14, 30, 37; Sub-series, A. 80.
 Necrosis, D. 10? Sub-series A. 115.
 Angular curvature, D. 13, 14, 11, 29, 30, 34, 27, 28, 36.
 Lateral curvature, D. 16, 19, 15, 21, 22, 23, 24, 25, 26, 32; Sub-series A. 147, 148, 152.
 Posterior curvature, D. 17, 18, 20, 38.
 Distortions of the chest, D. 16, 17, 23, 25, 30, 38; Sub-series A. 148.
 Distortions of the pelvis, D. 16, 19, 22, 38; Sub-series A. 147, 148, 150, 152.

- D. 1. Portion of a Spine, in which a fracture extends obliquely through the body of the tenth dorsal vertebra, its superior articular processes, and the inferior articular and spinous processes of the ninth dorsal vertebra.
- D. 2. Portion of a Spine, with oblique fractures through the arches of the fourth and fifth cervical vertebræ, and a vertical fracture through the body of the fifth.
- D. 3. Portion of a Spine, with a transverse fracture through the body of the twelfth, and a vertical one through that of the eleventh, dorsal vertebra.
- D. 4. Sections of a Spine, in which it is probable that there had

been a fracture and dislocation of the first lumbar and the last dorsal vertebræ. The first lumbar vertebra, unchanged in texture, but deprived of the fore part of the upper margin of its body, is thrown backwards, so that its fractured anterior margin is placed under the posterior margin of the body of the twelfth dorsal vertebra. They appear as if the last dorsal vertebra, with the superior portion of the spine, had been pushed forwards and downwards, breaking off and sliding over the upper and anterior margin of the first lumbar. In this position the two vertebræ are firmly fixed by bone deposited in front of the angle formed by their bodies. At the angle thus formed the body of the first lumbar vertebra projects into the spinal canal, reducing it to a fourth of its natural diameter. A distance of an inch intervenes between the spinous processes of the last dorsal and the first lumbar vertebræ. On the right side their corresponding articular surfaces appear to have been separated and re-united by bone; on the left side the inferior articular process of the last dorsal vertebræ is wanting; but there are appearances as if it had been united to the posterior part of the body of the displaced first lumbar vertebra: it was probably detached in the dissection.

- D. 5. Section of a Spine, in which there has been a comminuted fracture of the body of the first lumbar vertebra. A fragment of the body has been pushed backwards into the vertebral canal, completely obliterating it. Some new bone is formed in front of the spine above and below the fracture, and holds the adjacent vertebræ together.

The patient, an adult, lived about three months after the injury. There was no paralysis of the lower limbs.

- D. 6. Part of the Spine of a Horse, in which the bodies of two lumbar vertebræ are united by a strong thick arch of bone, extending like a bridge over the side and front of the intervertebral space. The portion of the intervertebral ligament beneath the bridge is absent; but there is no appearance of injury or disease of the adjacent bones.

Several years before death, the horse received a severe injury of the back.

Presented by R. S. Wells, Esq.

- D. 7. The base of a Skull, with the first cervical vertebra. The vertebra, displaced forwards and to the left side, is in every part, except the right half of its posterior arch, united to the occipital bone. Its projection within the foramen magnum has considerably diminished the size of that aperture.
- D. 8. A Sacrum and Coccyx, firmly united by bone. The coccyx deviates considerably to the left side.
- D. 9. Four lower Dorsal Vertebrae, and three Ribs. They are all united by smooth layers of bone extending, like bridges, over the anterior and lateral surfaces of the bodies of the vertebrae, and thence laterally over the heads of the ribs.
- D. 10. Sections of two Lumbar Vertebrae, in the body of one of which is an irregular circumscribed cavity, formerly the seat of abscess, or, possibly, of necrosis. The cavity opens anteriorly, through the body of the vertebra, and posteriorly, by a wide aperture into the spinal canal. In the neighbourhood of the cavity the adjacent surfaces of the vertebrae are thickened, indurated, and in part united by hard new bone. New bone is also abundantly formed on the anterior surfaces of their bodies.
- D. 11. Section of a Spine, in which there has been destruction by ulceration of the bodies of six of the dorsal and lumbar vertebrae. The vertebrae above and below the seat of the disease have been approximated and firmly united by bone. There is an acute angular curvature of the spine, but the diameter of the canal which contained the medulla spinalis is not lessened; rather, by the extensive destruction of the bodies of the vertebrae, it is increased where the angle is most prominent.
- D. 12. Three Dorsal Vertebrae, united by bridge-like portions of bone extending between the anterior and lateral surfaces of their bodies, and forming considerable projections, like exostoses, in front of the intervertebral spaces.

- D. 13. Portion of a Spine, in which the bodies of two dorsal vertebræ are completely destroyed by ulceration, and those of two others were in progress of removal.
- D. 14. Portion of a Spine, in which the bodies of the eleventh and twelfth dorsal vertebræ are almost completely destroyed by ulceration, and those of three others were in like progress of removal. The diseased bone is rough and uneven, but retains its natural hardness. There is no angular curvature.
- D. 15. Portion of a Spine, with a strong lateral curve in which all the dorsal and the first lumbar vertebræ are comprised. The aorta and the vena azygos have been injected, to show the change in their direction, corresponding with the altered form of the spine : their diameter is not lessened.
- D. 16. A Spine, Thorax, and Pelvis, from an adult woman. All the dorsal and the first two lumbar vertebræ are comprised in a lateral curve, the convexity of which is directed to the right, and backwards. There are slight compensating curves in the cervical and lower lumbar regions of the spine. The bodies of the vertebræ and intervertebral spaces are much deeper in the convexity than in the concavity of the curve ; they are also twisted round, so that what were their anterior surfaces are directed outwards, towards the convexity of the curve ; this outward direction being chiefly observed in those vertebræ which are in the middle of the curve, while those at each end of it gradually approach nearer to their natural direction. Connected with this twisting of the bodies of the vertebræ, is a narrowing of the space between the spinous processes and the right transverse processes of the vertebræ, although the spinous processes are directed rather towards the left side, that is, towards the concavity of the curve. The space between the spinous and left transverse processes is somewhat increased in width and depth.

The thorax projects obliquely forward, and to the left, and its sides are flattened. The posterior portions of the right ribs are directed downwards, lying nearly in contact with the vertebræ ; and then, bending abruptly round the

vertebræ, the ribs are directed forwards and to the left, with narrow intercostal spaces. The left ribs, crowded together in the concavity of the curve, are directed almost horizontally, first outwards, and then straight forwards; only their extreme ends and their cartilages being directed inwards to the sternum. The sternum and anterior walls of the thorax, are arched as much as the lateral walls are in their natural state; while the lateral walls are as flat as the anterior should be.

The cavity of the pelvis is of ordinary size, but its antero-posterior axis, in correspondence with the obliquity of the lumbar vertebræ, is directed obliquely, from before backwards, and from right to left.

- D. 17. A Spine, Thorax, and Pelvis. The spine, in its dorsal region, is curved with the convexity backwards and a little to the right. The thorax, projecting very far forwards, is flattened at its sides; its transverse diameter is only five inches; its antero-posterior diameter is eight inches and a half. The pelvis is of nearly natural form and size; but its obliquity is somewhat lessened, and its antero-posterior diameter is rather diminished, while its transverse diameter is, in an equal degree, increased.
- D. 18. The Spine of an aged person, which, in its whole extent, is curved with the convexity backwards, and a little to the right. The bones are all healthy, but light.
- D. 19. The Spine and Pelvis of a young person. The spine exhibits three slight lateral curves; the first, in the superior dorsal region, is directed to the left; the second, in the middle dorsal region, to the right; and the third, in the inferior dorsal and superior lumbar region, to the left again. The pelvis is remarkably deformed. The internal surfaces of the ilia are unnaturally concave, and their crests are incurved. The ischia are approximated, so that their spines are only an inch and a quarter, and their tuberosities only half an inch, apart: their ascending rami are directed almost vertically and parallel to each other, with a distance of from half to three quarters of an inch from each other: they are

also bent and prominent in front of the symphysis pubis. The lower part of the sacrum is abruptly turned forwards, in a horizontal plane. While the inferior aperture of the pelvis is thus narrowed, the superior is of nearly natural dimensions. A section of one of the ilia shows that its texture is light, spongy, and soft. Probably the patient had rickets.

- D. 20. A Spine, which, in the upper part of its dorsal region, is slightly curved to the right and backwards. New bone is formed on the margins of many of the vertebræ.
- D. 21. A Spine and Sacrum. The spine presents two lateral curves; one in the dorsal region directed to the right, the other in the inferior dorsal and lumbar region directed to the left. The changes in the form and direction of the vertebræ are similar to those shown in D. 16, but less in degree.
- D. 22. A Spine and Pelvis. The spine presents two lateral curves, like those in the preceding specimen. The pelvis is of natural size and form.
- D. 23. A Spine, with portions of the Ribs. The spine presents slight lateral curves in its dorsal region; the superior curve is directed to the right, the inferior to the left, and they exactly compensate each other, so that the lumbar and cervical portions of the spine lie in the same vertical plane. The changes of form and direction of the vertebræ are as in the preceding specimens.
- D. 24. A Spine and Pelvis, similar to those marked D. 16. There is considerable deposit of bone enlarging and surrounding the articular processes of those vertebræ which are comprised in the concavity of the curve; a change which may also be observed, in various degrees, in many others of the specimens of lateral curvature.
- D. 25. A Spine, Thorax, and Pelvis. The middle of the dorsal region of the spine is strongly curved towards the left and

backwards, and there are compensating curves to the right and forwards above and below this. The description of D. 16 will almost exactly apply to this specimen, except that in this the principal curve is directed to the left, in that, to the right; and that in this, the thorax is less flattened at its sides.

- D. 26. A Spine, with portions of the Ribs. The spine presents three lateral curves, of which the principal one is in the lower dorsal region, and is directed to the right and backwards. The aorta is preserved, to show its adaptation to the altered form of the spine.
- D. 27. The Dorsal portion of a Spine, with an acute angular curvature in consequence of destruction of the bodies of five vertebræ. Together with the angular curvature, there is also lateral displacement, the superior vertebræ being united to the left of the inferior. The aorta, upon the altered part of the spine, forms two very acute angles; the first, where it turns to the right, in adaptation to the lateral displacement; the second, where it resumes its downward course.
- D. 28. The dorsal portion of a Spine, with acute angular curvature, in consequence of destruction of the bodies of three vertebræ. The aorta, upon the altered part of the spine, forms a very acute angle, which is directed backwards, in correspondence with the angle of the spine itself.
- D. 29. A Spine, with a very acute angular curvature, in consequence of the destruction of the bodies of the six lower dorsal vertebræ. The vertebræ above and below the seat of disease have been firmly united with the remains of the bodies of those that were ulcerated, and with one another.
- D. 30. A Spine, Thorax, and Pelvis. There has been ulceration of the bodies of the lumbar vertebræ, and of the sacrum in its whole extent. Four of the bodies of the lumbar vertebræ are destroyed, and an angle is formed by the approximation of the vertebræ above and below the situation of the disease;

but their union by bone is incomplete. The thorax is depressed anteriorly, so that a space of only two inches and a half intervenes between the ensiform cartilage and the ossa pubis, and the false ribs nearly touch the crests of the ilia. All the ribs arch upwards; and the sternum arches forwards.

D. 31. A Sacrum and the Fifth Lumbar Vertebra. Their articular processes are united by layers of bone, extended over their anterior surfaces.

D. 32. A Spine, with two lateral curves in its dorsal region, and one in the lumbar. The principal curve is in the superior dorsal region, and is directed to the right side. The bodies of the vertebræ are thinner on the concave, than on the convex side of each curve, and there are thin growths of bone from their edges overlapping the thinner intervertebral ligaments in each of the concavities of the curves.

Presented by Thomas Wormald, Esq.

D. 33. Part of a Spine, with portions of the Ribs. The bodies of nearly all the vertebræ are united by layers of bone deposited on their anterior surfaces, and projecting with smooth round surfaces in front of the intervertebral spaces. Five of the ribs are similarly united, by their heads and tubercles, to the bodies and transverse processes of the vertebræ.

D. 34. A Spine and Pelvis. The spine presents an acute angular curvature in its dorsal region, the consequence of the destruction, by ulceration, of the bodies of the last nine dorsal and the first lumbar vertebræ. Two of the ribs are united by bone to the spine. The pelvis is well formed.

D. 35. A Sacrum, with the Fifth Lumbar Vertebra. Their corresponding articular processes on the left side are united by bone. The canal of the sacrum is open posteriorly in its whole extent.

D. 36. Portion of a Spine, in which the bodies of four of the lower dorsal vertebræ have been removed by ulceration. The

ordinary process of cure has taken place, the vertebræ above and below the seat of the disease approximating and uniting. But, together with the angular curvature thus produced, there is a lateral deviation of the axis of the spine, the lumbar vertebræ being placed to the left of the lower dorsal. The spinous processes are removed, to show that notwithstanding the angle of bone projecting into the vertebral canal, the space for the medulla spinalis is here greater than either above or below.

- d. 37. The lowest two Lumbar Vertebræ and the upper part of the Sacrum of a woman who died with lumbar abscess, which communicated with the spinal canal. There are deep ulcerations of the anterior part of the body of the fourth lumbar vertebra, and of the posterior part of the fifth. A similar ulcerated aperture in the upper part of the sacrum opens into the spinal canal. There are several irregular deposits of new bone on the front of the vertebræ and of the body of the sacrum, some of which form bridges extending from one vertebra to another.
- d. 38. Bones of the Trunk of an old woman. The dorsal portion of the spine is deeply curved backwards. The dorsal vertebræ are reduced in size anteriorly, but their texture is not distinctly altered. Between the ninth and tenth, there is a deposit of new bone. The antero-posterior diameter of the chest is augmented, and the sternum is much curved forwards, but the height and width of the chest are diminished; the ribs anterior to the angles being nearly straight, and some of the lower intercostal spaces being almost obliterated. Several of the ribs on both sides seem to have been fractured and reunited. The left half of the pelvis is atrophied, every part of the os innominatum being reduced in size. The head of the left femur is so closely anchylosed to the acetabulum, that they seem to form one bone. The shaft of the femur, which was turned inwards at a right angle with the trunk, was broken off after death. Its tissue, as well as that of the pelvis and ribs, was soft, light, and fragile.

S E R I E S V.

INJURIES AND DISEASES OF MUSCLES, TENDONS, BURSÆ, SHEATHS OF TENDONS, AND FASCIÆ.

Injuries and Diseases of Muscles.

Fatty degeneration, 1.

Ossification, 2 ; and Sub-series A. 130.

Rupture, 3, 4, 5 ; and Series II., 25, 56.

Tumours, 6.

Entozoa, 7, 8.

See also the Diseases of the Heart.

" " Tendons, 9, 10, 11.

See also the specimens of Dislocations.

" " Bursæ, 12 to 18, 21.

" " Sheaths of Tendons, 19, 20, 22.

" " Fasciæ, 23 ; and Series XI., No. 11.

See also the specimens of Heruia.

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1. A **SOLEUS** Muscle, completely degenerated into fat. No muscular fibres can be discerned ; in their places is a fatty tissue, like that of the ordinary healthy fat, which on the posterior part is arranged in a fasciculate manner, as the muscular fibres were, but anteriorly appears lobulated or granular.

The gastrocnemius and other muscles of the back of the same leg were similarly altered. The muscles on its anterior part were pale and flabby. All its other parts appeared healthy. Case-Book, Vol. i. p. 59, No. 104.

Presented by Thomas Carden, Esq.

2. Part of a **Vastus Internus Femoris** Muscle, with the superficial

and deep femoral arteries. Large portions of the muscle are ossified. The largest portion of bone lies so close to the arteries, that it probably presented during life the characters of a pulsating tumour.

3. The end of the Tail of a Rat, with numerous long slender tendons attached to it, which, it is probable, were pulled out with small pieces of their muscles, in the attempts which the animal made to escape, when its tail had been caught in a trap.

4. The Tendon, with part of the muscular fibres, of the Flexor Longus Pollicis, which were torn out from a man's arm.

The patient was a butcher, whose thumb was caught by a meat-hook, on which he remained suspended till the muscle gave way. He recovered quickly from the injury.

5. Parts of the bones of a Middle Finger, with the tendon and some of the muscular fibres of their portion of the extensor muscle, dried.

They were torn away from their connections by the explosion of a gun while the patient's hand was resting on the muzzle.

Presented by Henry Bateman, Esq.

6. Sections of a Rectus Femoris Muscle, in which are several large lobulated and circumscribed masses of a soft flocculent medullary substance. The muscular fasciculi are separated by the morbid growths, but appear of healthy texture.

A large medullary tumour from the axilla of the same patient, is preserved in Series XXXV.

7. Portions of a Longissimus Dorsi Muscle, in which are specimens of the Cysticercus Cellulosæ (Rudolphi). The cysts are placed in the cellular tissue connecting the muscular fasciculi. In the upper portion of the muscle are two cysts, from which the cysticerci lying loose in the bottle were removed; in the lower portion the cysticercus is attached to the interior of its cyst.

These specimens were taken from the body of an old man, in many of whose voluntary muscles similar entozoa existed.

8. Portions of Muscle and Liver, from a Pig, in which are numerous cysts, like those in the preceding specimen, and probably, like them, containing cysticerci.
9. The upper portion of a Humerus, with part of the long tendon of the Biceps muscle. The tendon has passed out of its groove and is confined to the adjacent part of the humerus by a tough membranous sheath, formed apparently by condensed fibro-cellular tissue. The tendon was attached to the margin of the glenoid cavity in the usual manner.
10. Portion of a Humerus, with the long tendon of the biceps muscle, which, having been separated from its attachment to the scapula, has become fixed to the lesser tuberosity of the humerus.
11. A similar specimen.

Both these humeri present indications of having been the seat of chronic rheumatism.
12. A Shoulder-Joint, exhibiting an enlargement of the bursa between the deltoid muscle and the capsule. The lining of the bursa is smooth, like the surface of a mucous membrane. At the bottom of the bottle are numerous flat oval bodies, of moderately firm consistence, which were contained in the enlarged bursa.
13. Two enlarged Bursæ, removed with the integuments from over the Patellæ of the same person. The walls of both the bursæ are thick, tough, and laminated, and cords are attached by one or both extremities to their internal surfaces.
14. A similar Specimen. The cyst is larger than either of the preceding, and was distended by a honey-like fluid.
15. A similar Specimen removed after death with the patella and other parts. The enlarged bursa is laid open from the front, showing its interior traversed by numerous slender tendinous cords, from some of which lobulated growths are suspended.

16. An enlarged Bursa, removed with the integuments from the front of a Patella. The walls of the bursa are between two and three lines in thickness, tough, fibrous and laminated, and its cavity was nearly filled by a substance like fibrine or imperfect false membrane, some of which is still attached to its internal surface.
17. Sections of a diseased Bursa, which was removed from the front of a Patella. In consequence of long standing disease, its walls have become from one to four lines in thickness, and very hard, tough, and coarsely fibrous. Its internal surface is irregular, and its cavity was filled by a small quantity of yellow fluid, in which the small white bodies, now lying at the bottom of the bottle, were contained. Most of these bodies are hollow, their walls being formed by a soft white substance.
18. Two Bursæ, which were removed from the anterior surfaces of the Patella of the same person. In each specimen the cavity of the bursa is almost completely obliterated by the formation of a firm fleshy substance in it, thickening its walls.
19. Part of a Hand and Fore-Arm, in which the sheaths of the extensor tendons of the finger and thumb have been greatly enlarged by the accumulation of fluid containing small cysts. The diseased sheaths are laid open; and one of them is shown extending up half the fore-arm. The walls of the sheaths are thickened; their internal surfaces, in many parts, granular, or like mucous membrane. The partitions between some of them appear to have been absorbed, so that several form one cavity.
20. A collection of numerous small, round, and oval Cysts, with soft pale walls, which were found in the diseased sheaths of tendons last described. They floated in an opaque, yellow, and moderately thick fluid.
21. A collection of Cysts, like those last described, but rather larger and with thinner walls, which were removed from the bursa

beneath the annular ligament of the fore-arm of a young woman.

There is a cast of the fore-arm, No. 120.

22. A collection of soft solid Bodies, removed from the sheaths of tendons. Most of them are thin, oval, flat, sharp-edged, and smooth, like melon seeds: some are of irregular shape, or branched.
23. Part of a Hand, in which the middle and ring fingers were permanently flexed, in consequence of the thickening and contraction of the portions of the palmar fascia connected with them.

SERIES VI.

INJURIES AND DISEASES OF THE BRAIN, ITS MEMBRANES, AND ITS BLOODVESSELS.

INJURIES AND DISEASES OF THE BRAIN.

Effusion of blood and its consequences (Sanguineous Apoplexy).

On the exterior of the brain, 9, 15.

In its interior, 9, 14, 65, 68, 10, 11, 12, 13.

Effects of external violence.

Laceration, 25, 31, 36.

Protrusion (Hernia Cerebri), 23, 32, 33, 34.

Effects of hydrocephalus, 41, 42, 64.

Abscess, 21, 22, 47, 29, 66.

Softening, 24, 36.

Ulceration, 24, 47.

Medullary cancer, 18? 19, 51, 62.

Tubercle, 40, 48, 50, 72.

Hydatids, 60, 61, 69, 70.

Tumours of uncertain nature, 18, 20.

INJURIES AND DISEASES OF THE MEMBRANES OF THE BRAIN.

Effusion of blood between the skull and dura mater, 38, 39, 71.

in the arachnoid sac, 45, 52, 1, 2, 3.

in the pia mater, 9, 15, 25.

Diseases of the dura mater.

Effusion of lymph, 4, 7.

Thickening, 4, 5, 7, 63.

Ulceration, 47, 57.

Growths of bone-like substance, 35, 46, 53, 54.

Cancerous and other tumours, 6, 8, 16, 58, 48, 55.

Diseases of the pia mater and arachnoid.

Formation of false membrane in the arachnoid sac.

In simple membranes, 1, 2, 3, 5.

In sacs containing blood, 45, 52.

Adhesions, 5, 17.

Tubercle and other morbid growths, 17, 37, 43, 50, 56, 73.

Diseases of the ventricles and choroid plexuses, 26, 27, 41, 42, 64.

Diseases of the pituitary body, 30, 73.

Injuries and diseases of the principal bloodvessels of the brain and its membranes.

Thickening, 28.

Rupture, 38? 39, 59.

Aneurism, 44, 59, 67, 68.

1. Portion of Dura Mater, exhibiting a newly formed membrane upon its internal surface. This membrane lines the whole of the dura mater covering the right hemisphere of the cerebrum; its thickness is about equal to that of the peritoneum, and it is very vascular throughout: it has been completely separated from the dura mater, except along one edge, where it is still adherent; and it will be observed that this edge is insensibly lost upon the dura mater, so that the internal surface of the new membrane, and that of the dura mater, appear to be continuous. The outer surface of the membrane is rust-coloured, like partially decolorized blood. Towards its lower part, the new membrane is thicker than above, and it is here divisible into two distinct layers.

The patient had been deranged for three years before his death. He had had no signs of inflammation of the membranes of the brain, but, shortly before his death, had hemiplegia of the left side. The arachnoid beneath this layer of membrane was thickened. Case-Book, Vol. i. p. 7, No. 16.

2. Portion of Brain with its Membranes, exhibiting the same changes as the preceding specimen. The new membrane occupies an extent of some inches over the right hemisphere of the cerebrum; it adheres firmly to the internal surface of the dura mater, and appears vascular.

The patient had suffered for many years with disease of the urinary organs. He died with fever attended by pain in the head and delirium. Case-Book, Vol. i. p. 8, No. 17.

3. A Specimen of the same disease as Nos. 1 and 2. The new membrane is here very thick and compact, and has the same rusty colour as No. 1: it has been partially separated from the dura mater, to which it was firmly adherent.

4. Portions of Dura Mater and Pia Mater. Blood and lymph are

copiously effused upon the external surface of the dura mater. The pia mater is thickened, opaque, and indurated, both in that part which covers the external surface of the brain, and in that which penetrates between the convolutions.

These changes were consequent on external injury.

5. Portion of Dura Mater, thickened and indurated, with deposit of lymph upon its internal surface. The dura mater is from a line to a line and a half in thickness, and has a tough laminated texture.
6. Portion of a Frontal Bone, with the subjacent Dura Mater. A tumour, with a coarsely nodulated surface, proceeding apparently from the outer surface of the dura mater, has, by its growth, caused the absorption of the bone, and has protruded through it. A portion of the tumour also is lodged between the skull and the dura mater, and projects inwards upon the anterior and upper part of the brain.
7. Portion of Dura Mater, with recent deposits of lymph upon both its surfaces.
8. Portion of Skull, with the Dura Mater, exhibiting the growth of small, flat, fleshy tumours from both the surfaces of the latter. The tumours arising from the external surface of the dura mater have caused the absorption of the bone in some situations, so that they appear on the outside of the skull. The skull is considerably thickened, and the diploe appears consolidated.
9. Portion of Cerebrum, in the substance of which there is a large dark Apoplectic clot of blood, apparently recently effused. There is also an effusion of blood upon the surface of the brain, beneath the arachnoid membrane. The blood within the brain is loosely connected with the sides of the cavity in which it lies.
10. Portion of Cerebrum, in the substance of which there is an Apoplectic clot of longer standing. The blood, partially deco-

lorized, is of a much lighter colour, and appears drier, than that in the preceding specimen. The surface of the clot is in close contact with the adjacent substance of the brain.

The two preceding specimens were taken from a person who had had two apoplectic attacks at distant periods. Case-Book, Vol. i. p. 8. No. 18.

11. Portion of Cerebrum, in the substance of which there is an Apoplectic clot, from which the red colour has almost entirely disappeared. The surface of the clot is closely united to the substance of the brain, which also appears more smooth than that immediately surrounding the clots in the preceding specimens.
12. Portions of Cerebrum, in the substance of which are the two parts of a cavity which contained a serous fluid, and which was, probably, formed by the complete removal of an apoplectic effusion, such as is shown in earlier stages in the preceding specimens. The form of the cavity is irregular, but its interior is smooth, and the adjacent substance of the brain appears healthy.
The patient was forty years old, and had an apoplectic attack about four months before his death. Case-Book, Vol. i., p. 8, No. 19.
13. A similar specimen; but the interior of the cavity is smoother than that in the preceding specimen.
14. Portion of Cerebrum, in the substance of which there is a cavity formed by a recent apoplectic effusion of blood. The blood has been removed, to show the internal surface of the cavity, which is rough and irregular, and appears to have small effusions of blood in and beneath its walls.
15. Portion of Cerebrum, with an extensive effusion of blood upon its surface beneath the arachnoid membrane.
16. Portion of Skull, with the Dura Mater, exhibiting the growth of a small, oval, firm, fibrous tumour from the internal surface of the dura mater.
17. Portion of Cerebrum, in the substance of which a firm, round

mass, an inch in diameter, and, apparently, composed of tuberculous matter, was imbedded. The membranes of the brain are firmly adherent to the surface of the mass.

18. Portions of the Cerebrum, in which there are several masses of a morbid substance, apparently medullary matter, of various sizes, closely adherent to the substance of the brain.
19. Portions of Cerebrum, in the substance of which there are several, probably medullary, tumours of different sizes. The sections of some of these tumours show that they are of a firm consistence; and that blood is effused in the interior of some, and upon the surfaces of others.

From a child one year and nine months old, whose testicle, with a large medullary tumour, was removed five months before death, and who had similar tumours in the lungs and other parts. The case is described by Mr. Earle in the *Medico-Chirurgical Transactions*, Vol. iii. p. 59, London, 1812. Case-Book, Vol. i. p. 60, No. 106.

20. Cerebellum, with the Dura Mater covering it, from a young subject. The natural structure of the cerebellum is almost entirely removed, and in its place there is a firm whitish substance, with specks of substance like bone scattered through it.
21. Portion of Cerebrum, exhibiting the cavity of an abscess in its substance. The walls of the cavity are irregular and very rough.
22. Portion of Cerebrum, exhibiting an abscess in its anterior lobe, which communicated with the lateral ventricle of the same side.
The patient was a man forty years old, who appeared to die exhausted by syphilis and the effects of mercury. The only cerebral symptoms were extreme restlessness and delirium at night. The case is related by Mr. Earle, in the *Medical and Physical Journal*, Vol. xxiii. p. 89, London, 1810.
23. Several large portions of Cerebrum, which protruded in a case of Hernia Cerebri, and were removed during life.

The patient was a boy twelve years old. He had fracture with depression about the lambdoidal suture. Portions of bone were removed without injury of the dura mater; and on the tenth day after the fracture, the hernia of the brain

appeared, and in three days was as large as an orange. He died on the third day after the removal of these portions of brain, in which, when first removed, both the cortical and medullary substance presented a natural appearance. The case is described by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. viii. p. 14, London, 1817. Case-Book, Vol. i. p. 83, No. 123.

24. Portion of Cerebrum, in which irregular, ragged ulceration extends from the surface deeply into its substance.

The consequence of external injury.

25. Portions of Brain, exhibiting deep lacerations of its substance, with effusions of blood in the anterior, and in one of the middle, lobes of the cerebrum, and in both hemispheres of the cerebellum.

From a woman who fell down-stairs upon her occiput. She was immediately insensible; and died on the fifth day, with signs of acute inflammation of the brain. A fracture was found extending from the transverse ridge of the occipital bone through several portions of the petrous part of the temporal bone. Case-Book, Vol. i. p. 9, No. 20.

26. Choroid Plexuses, in which there are small cysts containing a soft substance.

27. Choroid Plexuses, in which there are small thin-walled cysts containing a soft tuberculous matter.

Many of the lymphatic glands of the patient were enlarged, and contained a substance similar to that which fills these cysts.

28. Cerebral Arteries, in the coats of which earthy matter is deposited.

29. Portion of Cerebrum, in the left hemisphere of which there is a cyst, an inch and a half in diameter, which contained pus. The cyst is situated immediately over the Fissura Sylvii; its walls are distinct, thin, smooth on both surfaces, and easily separable from the surrounding substance of the brain.

The patient had purulent discharge from the left ear for five weeks before his death. He died suddenly. The petrous portion of the temporal bone, over which this encysted abscess was situated, was extensively diseased. The portion of brain between the abscess and the bone was dark and sloughy. Case-Book, Vol. i. p. 10, No. 21.

30. Pituitary Body, considerably enlarged and converted into a uniform, firm, white substance.
31. Portion of Cerebrum through which a bullet passed in the track which is indicated by a piece of glass, and which terminates in a rounded cavity, wherein the bullet was lodged.

The patient fired two pistols into his mouth. He appeared to suffer but little from the injury, and was able to rise from his bed on the sixth day after the injury. He died with hemorrhage on the twelfth day. Case-Book, Vol. i. p. 10, No. 22.

32. Portions of Brain, Skull, and Cerebral Membranes, exhibiting a Hernia Cerebri. The front of the preparation shows a vertical section of the protrusion and of the part of the brain from which it has arisen. In the centre of the protruded brain, which consists of medullary substance, the vessels have given way and blood is effused in it. The portions of the skull and of the membranes of the brain surrounding the base of the protrusion, were included in the section, for the purpose of showing how the protrusion has taken place through the openings formed by ulceration in the dura mater and pia mater, and through the aperture in the bone.

33. Section of the protruded Brain last described. The deep groove which intervenes between the outer part of the protruded mass and the portion of brain from which it has arisen, was occupied by the bone and by the membranes of the brain.

The patient, a boy thirteen years old, had extensive fracture of the frontal bone, and several portions of bone were removed without injury of the dura mater. The protrusion of the brain began on the fifth day after the injury, and increased, without disturbance of the intellect or other remarkable symptoms, till the tenth day, when the protruded mass, consisting of healthy cortical and medullary substance, was cut off. For the next ten days the protrusion was restrained by firm pressure; but, insensibility ensuing, the pressure was discontinued: the protrusion at once again made progress, and the patient died on the twenty-seventh day after receiving the injury, with softening of the brain. The case is published by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. viii. p. 22, London, 1817. Case-Book, Vol. i. p. 93, No. 125.

34. Portions of Cerebrum, which protruded in a case of Hernia Cerebri, and were removed during life.

The patient, a boy eleven years old, had fracture of the frontal bone, several

portions of which were removed, without injury to the dura mater. The protrusion began on the seventh day; it was twice removed, and as often reproduced; but the portion last protruded sloughed off, and the patient completely recovered. The case is published by Mr. Stanley, with the last preceding one. Case-Book, Vol. i. p. 90, No. 124.

35. Portion of Dura Mater, of which a large portion on each side of the falx cerebri is lined by a thin uniform layer of bone-like substance.

36. Portion of Cerebrum, exhibiting a circumscribed softening, with loss of substance, and effusion of small quantities of blood in its convolutions.

The consequence of external injury.

37. Portion of Cerebrum, with a small, conical, bone-like tumour, which, apparently originating in the pia mater, has penetrated between the convolutions into the substance of the brain.

38. A large Clot of Blood adhering to the internal surface of the dura mater, which covered the upper part of one of the hemispheres of the cerebrum.

The effusion was the consequence of external injury.

39. A large Clot of Blood between the dura mater and the lateral part of a Skull.

The blood was effused from the Arteria meningea media, which was ruptured by external violence.

40. Portions of a young person's Brain, in the substance of which there are several masses of firm, yellowish, tuberculous matter. One of these masses occupies the greater part of the interior of the tuber annulare.

41. Portion of Cerebrum, exhibiting the septum lucidum stretched in consequence of the distension of the lateral ventricles with fluid. In the anterior portion of the septum there is a large irregular opening traversed by thin shreds; and the posterior portion of the septum which remains is very thin.

42. A similar specimen, except that the opening is in the posterior

portion of the septum lucidum, and has smoother and more even edges.

43. Portion of Cerebrum, with a small tumour which was imbedded between its convolutions. The tumour is nodulated on its surface, and is composed of a firm substance; it was connected with the brain only by the pia mater and arachnoid membrane.
44. Portion of Cerebrum, with an aneurism of the middle cerebral artery about an inch from its origin. The sac of the aneurism is filled by dark, firm, laminated coagulum; its walls apparently consist, in the greater part of their extent, of the dilated coats of the artery. The arteries with which the aneurism is connected are larger and thicker than is natural.

The patient was a man forty-five years old. About two years before his death, he had an apoplectic attack. After this he had several slighter attacks, and was hemiplegic, though gradually recovering, to the time of his last illness; in which illness he had obscure signs of gastric disease, then became drowsy, and at last insensible, and died in a state of great exhaustion.

The vertebral artery, after death, was found irregularly enlarged into pouches. The canal of the middle cerebral artery was pervious, the aneurismal dilatation affecting chiefly the inferior portion of its walls. Case-Book, Vol. i. p. 37, No. 72.

45. Portion of Dura Mater, exhibiting a newly-formed, thin, and nearly transparent membrane, closely adherent to its internal surface, and consisting of two layers which form a large sac containing coagulated blood.

The patient was a young man who had an attack of apoplexy, followed by paralysis of the right side and occasional convulsions, a short time before death. The effusion of blood compressed the right side of the brain. Case-Book, Vol. i. p. 39, No. 75.

46. Portion of Dura Mater, exhibiting a mass of bone-like substance, of low conical form, attached to the side of the falx cerebri.

The patient, twenty-eight years old, had from boyhood been subject to severe head-aches. A fortnight before he died, he had an acute head-ache, aggravated in paroxysms, with vomiting and slow pulse, which in a few days were succeeded by delirium and fever, and then by partial paralysis and insensibility. Copious effusions of serum and lymph were found, after death, in the cerebral membranes and ventricles. Case-Book, Vol. i. p. 21, No. 49.

Presented by Herbert Evans, Esq.

47. Portion of Cerebrum, exhibiting an abscess in the upper part of one of its hemispheres, with the dura mater which covered it. The abscess communicates with the lateral ventricle by the aperture through which a bristle is passed. The internal surface of the abscess is rough, and that of the ventricle is lined by lymph. Lymph is also deposited upon the dura mater, and there is an ulcerated aperture in it, which communicated with the cavity of the abscess, and through which a bristle is passed.

The patient, a child four years old, had an extensive scalp-wound of the right side, followed by suppuration, sloughing, and exposure of the cranium. A month after the injury was received, and while all seemed proceeding favourably, the child was seized with convulsions, which were followed by partial paralysis and insensibility. By the trephine, a small quantity of matter was let out from between the skull and dura mater, but without relief; and the child died three days after the convulsions began. Case-Book, Vol. i. p. 62, No. 107.

48. Section of the upper part of one hemisphere of a Cerebrum, exhibiting a large oval mass of tuberculous matter in its substance and between the membranes. A portion of the dura mater has a thick layer of tuberculous matter adhering to its inner surface.

From the same man as the penis, Series XXXI. No. 31, and the kidney, Series XXVI. No. 18.

49. A Cerebellum, with the Pons and Medulla Oblongata. Blood is diffused through a great portion of the substance of the pons, and extends nearly to its outer surface.

From a stout hearty man, who died an hour after a sudden attack of apoplexy. Case-Book, Vol. i. p. 29. No. 64.

Presented by Herbert Evans, Esq.

50. A Cerebellum, with the Pons and Medulla Oblongata. A large irregularly oval mass of tubercle is imbedded in the inferior and posterior part of one hemisphere of the cerebellum. A section of the tubercle displays the uniform, soft, yellow substance of which it is composed.

The patient was twenty years old, and phthisical. Five months before death he began to complain of coldness and numbness from the feet to the knees; this gradually increased, till three weeks later he had almost complete loss of sensation and voluntary motion up to the hips, attended with extreme rigidity and convulsive movements of the muscles of the lower extremities, and of the abdo-

men, and perhaps also of those of the thorax. The involuntary movements became less, but the loss of sensation more complete, till the patient died. His intellect was unaffected till three days before death. Case-Book, Vol. i. p. 43. No. 83.

Presented by Thomas Warner, Esq.

51. Sections of a Tumour, which occupied the interior of the lateral ventricles of a boy, aged twelve. The tumour is of irregularly oval form, knobbed on its surface, and measures from three to four inches in its diameters. It appears to consist throughout of a soft medullary substance. Portions of the choroid plexus are attached to one of its surfaces.

The boy had from infancy been subject to severe pain in the head; eight months before death he became amaurotic and of weak intellect. Case-Book, Vol. i. p. 22. No. 50.

Presented by W. C. Clough, Esq.

52. Portion of Dura Mater, upon the surface of which there is an adventitious membrane, in the form of a sac which was filled by coagulated blood. The membrane is of a dense texture, and of about the thickness of the dura mater. Portions of the blood still remain attached to the inner walls of the sac.

53. Three flat portions of substance, like bone, from the Falx Cerebri of a man who had been subject to epilepsy.

54. Portion of Dura Mater, with large plates of bone-like substance in the Falx Cerebri, and some smaller ones in its neighbourhood.

From a man who was subject to epilepsy.

55. Portion of Dura Mater, in the texture of which there is a deposit of melanotic matter, near the superior longitudinal sinus.

From the same patient as Nos. 190, 191, and 192 in Series I.

56. Portions of granular Adipose matter, mixed with a few short, stiff, pale hairs, which were found in a cyst beneath the pia mater covering the inferior surface of the cerebellum.

From a stout, strong man, forty-five years old, who died very suddenly, while in apparently good general health. Case-Book, Vol. i. p. 158. No. 183.

57. Portion of the posterior and upper part of a Skull, with the

subjacent Dura Mater. There is a large aperture formed by ulceration through the skull and the dura mater, both above and below the tentorium cerebelli. The edges of the ulcer, both in the bone and in the dura mater, are covered by granulations.

From a woman fifty years old. The disease commenced with what was regarded as carcinoma of the scalp, which, having passed into the stage of ulceration, slowly spread through the skull and dura mater to the brain. Case-Book, Vol. i. p. 176. No. 200.

58. Frontal Bone, with the subjacent Dura Mater. Several soft medullary tumours have been formed on the external surface of the dura mater. Many of them are imbedded in the skull; and one, of large size, having produced the complete absorption of the bone, has passed to the outside of the skull, where it is connected with a similar large mass between the bone and the pericranium. The bone itself is of very dense texture.

59. Two middle Cerebral Arteries, from the same patient. The trunk of that of the right side is partially dilated into a small bilobed aneurismal sac, which is nearly filled by a coagulum of pale fibrine. The trunk of the left artery is ruptured, at a point nearly corresponding to that from which the aneurism has arisen on the opposite side. The rupture, into which a bristle is passed, extends through all the coats of the artery, and in an irregular line round more than half its wall. There are several small deposits of fatty substance in the walls of the arteries.

From a woman eighty-four years old, who died twenty-two hours after an attack of apoplexy. A copious effusion of blood had taken place from the ruptured artery, into the substance and membranes of the base of the brain. Case-Book, Vol. i. p. 178. No. 202.

60. The right half of a Cerebrum. In its centre there is a cavity, in which a large acephalocyst hydatid was contained. The cavity is lined by a thin false membrane. It is much reduced in size by the contraction of the brain: the apertures in it were made after death. The adjacent cerebral substance is healthy.

61. The Acephalocyst Hydatid from the preceding brain. When full, it contained between five and six ounces of fluid.

From a girl, five years old, in whom signs of cerebral disease had existed for a year before death. For the last three months of her life, she had partial paralysis of motion on the left side. The substance of the brain around the hydatid, as well as in every other part, was healthy. Case-Book, Vol. i. p. 156. No. 182.

62. Portions of Brain, in which there are small circumscribed Medullary Tumours. The tumours are round, slightly nodular, moderately firm, and, on their cut surfaces, appear granular, with a mixture of a few radiating fibres. One of them is suspended separately. The adjacent cerebral substance appears healthy.

There were many similar tumours in different parts of the brain, but chiefly on its surface. The patient was an elderly woman, who had suffered long with obscure cerebral symptoms.

63. A portion of Dura Mater, of which all that part which covered the upper surface of the left cerebral hemisphere was thickened. In some situations it is nearly half an inch thick, and its substance throughout is hard, and tough, and appears irregularly laminated.

From a man who, eleven years before death, had a violent blow, by which it was supposed that his skull was fractured. The same patient's skull is preserved in Sub-series A. 49; his eye in Series IX. 17, 20; and his heart in Series XII. 60.

64. Part of the Brain of a Man twenty-eight years old, who had Hydrocephalus in his infancy, and whose head was enlarged and somewhat deformed in consequence of that disease. The whole of the internal surface of the ventricles is finely granulated, and appeared to be indurated. The inferior surface of the edges of the fornix is intimately adherent to the surface of the choroid plexus, and, through its medium, to the upper surface of the optic thalami.

The mind of the patient appeared in no degree affected by this disease: he was a very skilful furniture-painter; and died of a disease independent of the state of his brain.

65. A Section of a Cerebellum and Pons, with a clot of blood recently effused in the middle of the Pons.

The effusion appeared to be the cause of sudden death in a person who was already hemiplegic, from a former attack of apoplexy.

66. The Cyst of a large circumscribed Abscess, removed from one of the middle lobes of a cerebrum. Its internal surface is smooth, and lined by lymph, of which some has been turned off in a layer; its external surface is covered by shreds and flocculi from the adjacent cerebral substance; its walls are moderately tough and about half a line in thickness.

The patient was a middle-aged man, and had had only some slight and obscure signs of disease of the brain.

67. A left middle Cerebral Artery, with a small aneurism on one side of its trunk. The aneurism lay very deep in the fissura Sylvii, nearly imbedded in the adjacent cerebral convolutions, and it burst into the substance of the brain by the irregular rent which is indicated by the bristle. A part of its cavity is filled by a firm decolorized layer of coagulated blood.

68. A Clot of Blood, weighing between four and five ounces, which was effused from the aneurism last described into the substance of the left hemisphere of the cerebrum.

The patient was a footman thirty-eight years old. He had suffered from occasional giddiness, ringing in the ears, and other slight signs of disease of the brain; and had enlargement, with disease of the valves, of the heart; but he had been engaged in his work till the day before his death, when, while leaning over the side of his bed, he suddenly became insensible, and in a few minutes died.

There is a drawing of the brain with the clot in its recent state.

69. The Brain of a *giddy* Sheep, with part of its skull, and an Hydatid (*Cœnurus cerebralis*) which was contained in the left cerebral hemisphere. The greater part of the substance of the hemisphere has been removed or distended around the hydatid, and the whole thickness of the superjacent portion of the skull is in several places absorbed.

70. An Hydatid (*Cœnurus cerebralis*) from the Brain of a *giddy* Sheep. Minute white pearly bodies are attached in groups to many parts of the interior of the cyst.

71. Part of the Parietal Bone of an Infant, with Internal Cephalhæmatoma, *i. e.* an effusion of blood between the skull and dura mater. This effusion, as well as a similar effusion between the skull and the pericranium, appeared to have proceeded (at

least in part) from a fissure, about an inch long, through the parietal bone, at the margin of the effusion. The blood forms a circumscribed oval layer, about half an inch thick, and is coagulated. Thin plates of porous new bone have been formed in the dura mater around part of the margin elevated by the effused blood, as well as in distinct patches nearer to the centre of the part thus elevated. The bone appears to be formed between the two layers of the dura mater: a portion of the inner layer is reflected from the surface of the new bone over which it lay, and is indicated by a bristle. A small quantity of new bone is also formed on the inner surface of the skull, near the margin of the effused blood: but there is no appearance of any being formed beneath the blood.

The infant was twenty-five days old, when it died with convulsions, which had commenced two days before its death. Previous to these it had been healthy, with the exception of a slight diarrhoea.

The case is related by Dr. West, and the preparation is engraved, in the *Medico-Chirurgical Transactions*, Vol. xxviii. p. 397, London, 1845.

Presented by Dr. West.

72. A Cerebellum, on the upper surface of which an irregularly oval mass of tubercle, rather more than an inch in diameter, is deeply imbedded. The mass was connected with the inferior surface of the tentorium cerebelli, and has been in part detached from the cerebellum, to which it was very loosely attached: it presents a few scattered points of softening.

From a lad eighteen years old, who had severe pain in the head, with strabismus and impairment of speech. The first two symptoms subsided during the rapid development of tuberculous disease in the lungs and small intestines. Case-Book, Vol. i. p. 188, No. 208.

73. Portions of the Base of a Skull, with a diseased Pituitary Gland and other adjacent parts. The natural substance of the pituitary gland is lost in a mass of firm, pale, semitransparent, granular, cancerous substance, which extends from the gland into both the left and the right cavernous sinus. In the left cavernous sinus, the several nerves are lost in the morbid growth, which also protrudes on the inner side of the left Casserian ganglion, and somewhat compresses it. On the right side the nerves are in contact with the surface of the tumour.

The patient, a man forty-seven years old, had, for about five months before death, paralysis of the muscles of the left eye-ball and of the left levator pal-

pebræ, with dilatation of the pupil, and impairment, but not loss, of vision. In the last month of his life he had similar paralysis on the left side. He died with cancer of the salivary and cervical lymphatic glands, and with some apparently cancerous masses in the lungs. The case is published in a Clinical Lecture by Dr. George Burrows, in the *London Medical Gazette*, Vol. xxxvi. p. 485, London, July 18, 1845.

SUB-SERIES E.

HYDROCEPHALIC SKULLS.

- E. 1. Skull of a Child about ten years old. The sagittal suture and the middle portions of the coronal and lambdoidal sutures are open. The parietal, and the upper portions of the frontal and occipital, bones are much larger than is natural, and very thin and light; and the inferior occipital fossæ bulge out in large rounded prominences. The principal enlargement of the skull is in its posterior part.
- E. 2. Skull of a Girl eleven years old. The enlargement of the skull in consequence of hydrocephalus is effected by its elongation, and by the depression and hollowing of its base. An increase of width appears to have been prevented by the premature and complete closure of the sagittal suture. The coronal suture, and that between the frontal bone and the lesser alæ of the sphenoid, are wide open. The superior walls of the orbits are pressed downwards. The bones, generally, are thin and light; and in many parts of the inner table are deep depressions and foramina.

SERIES VII.

INJURIES AND DISEASES OF THE SPINAL CHORD AND OF ITS MEMBRANES.

Injuries of the chord, received in injuries of the spine, 3; and in Series IV., 1, 2, 9.
Adaptation of the chord to curvatures of the spine, Series IV., 14, 15, 23, 36, 38.
Softening of the chord, 7, 8.
Compression of the chord by morbid growths within the spinal canal, 4, 6, 10; and Series I., 115.

Diseases of the membranes of the chord.

Apoplexy, 9.

Effusion of Lymph, 8.

Plates of substance like cartilage, 1, 2, 5, 9.

Tumours, &c., 4, 6, 10.

1. PORTION of a Spinal Chord, exhibiting two small thin plates of a milk-white substance, like cartilage, connected with the arachnoid membrane.
2. A similar specimen.
3. Portion of a Spinal Chord, from a case of dislocation and fracture of the spine. The substance of the chord, in two inches of its length and in its whole thickness, is softened, and mixed with blood effused from its vessels. The altered portion of the chord was situated opposite to the injured vertebræ.

4. Portion of the Dura Mater enveloping the bundle of nerves constituting the Cauda Equina. A tumour, of a firm fibrous texture, is connected with the external surface of the dura mater, and being wholly contained within the spinal canal, made considerable pressure upon the nerves.

The patient, thirty-three years old, was suddenly seized with pains in the loins and paraplegia, with acute pain affecting the lower extremities. The paralysis extended upwards; sloughs formed on the sacrum; and he died two months after the beginning of his illness. Case-Book, Vol. i. p. 56, No. 99.

5. The Lumbar Portion of a Spinal Chord, with the roots of the nerves and its membranes. There are numerous thin white plates of substance like cartilage connected with the arachnoid membrane, especially with that portion of it which covers the posterior surface of the chord.

From a woman forty years old, who, for many years, had suffered severely from neuralgia in the left knee-joint.

6. Portion of a Spinal Chord, with its Membranes, exhibiting a firm, lobulated, morbid growth in the tissue behind and by the sides of the dura mater, within the third, fourth, and fifth dorsal vertebræ. The spinal chord was compressed by the morbid growth, but not otherwise altered.

The patient was thirty-six years old. He had slight signs of the disease about fifteen months before death. For the last six months of his life he had paraplegia. The growth shown in the preparation, when recent, appeared vascular, and was connected, through the intervertebral foramina, with a firm, white, caseous substance, like softening tubercle, deposited in the tissues covering the posterior part of the spine, from the second to the sixth dorsal vertebra. More superficially, there were deposits of pus beneath the trapezius and other muscles of the back. The tumour was loosely connected with both the dura mater and the vertebræ. The vertebræ were softened, but in other respects healthy. Case-Book, Vol. i. p. 84, No. 120.

7. Part of a Spinal Chord from the dorsal region. A portion of it, about half an inch in length, is soft, and reduced to less than half its natural size.

From a case of paraplegia, with angular curvature of the spine, in a lad eighteen years old. Opposite the contracted part of the chord a short process of bone projected from the angle of the curvature into the spinal canal. The portion of spine is preserved, Series IV. No. 35.

8. Lower half of a Spinal Chord, the whole substance of which is

softened. It is surrounded by a layer of lymph deposited in the tissue of the pia mater. This layer is in parts nearly a quarter of an inch thick; the lymph had a greenish gelatinous aspect, but is now pale, contracted, and wrinkled. At one part, the chord is crossed by a narrow band of firm, yellow substance, and its whole natural structure here seems to be destroyed.

The patient was twelve years old. Nearly six months before death he began to have signs of paralysis of the lower extremities; and these, in the following five weeks, almost imperceptibly increased, till he had complete loss of sensation and motion in the parts below the umbilicus, with retention of urine and incontinence of fæces. After this time, signs of acute inflammation of the membranes of the spinal chord and of the base of the brain ensued, from which, as well as from his previous symptoms, he for a time partially recovered; but they returned, and he died with sloughing over the sacrum. Besides the disease shown in the preparation, the pia mater at the base of the brain was infiltrated with lymph and pus.

9. Dorsal and Lumbar Portions of a Spinal Chord, in which a considerable quantity of blood has been effused in the tissue of the pia mater, especially on the anterior aspect, and about the roots of the nerves. There are several milk-white, oval, and irregular spots, like portions of cartilage, upon the arachnoid. The substance of the chord itself is healthy.

From an elderly woman, who, three weeks before her death, had an attack of cerebral apoplexy, the symptoms of which were slight, though between two and three ounces of blood were effused in the anterior lobes of the cerebrum and in the membranes and arachnoid sac covering them, and at the base of the skull. The time at which the effusion into the spinal membranes happened is uncertain. Case-Book, Vol. i. p. 179, No. 203.

10. Part of the Dorsal Portion of a Spinal Chord, with a thick irregular layer of lymph and tuberculous matter surrounding the dura mater, and slightly compressing the chord. Both the chord and the dura mater appear healthy in their texture.

The patient was a young man who had paraplegia, which he believed to have originated in a sprain. Tuberculous matter was deposited in and upon the adjacent vertebræ; and some of their intervertebral cartilages, as well as their own texture, were destroyed. There was no distortion of the spine.

SERIES VIII.

INJURIES AND DISEASES OF NERVES.

Atrophy, 3, 5, 6, 8, 18; Series II. 42; Series IX. 20, 22.

Healing and other changes after injuries, 2, 4, 7, 9, 10, 11, 14, 15; Series IX. 20, 22.

Tumours, 1, 12, 13, 16, 17.

1. A POSTERIOR TIBIAL NERVE, in which there is a circumscribed oval tumour, composed of a soft grumous substance. The component fasciculi of the nerve are separated and spread out around the tumour: the peroneal nerve is adherent to the surface of the neurilemma extended over the tumour.
2. An Anterior Crural Nerve from a Stump. The extremity of the nerve forms a hard bulbous swelling, into which the section of the nerve shows that its component fasciculi are continued.
3. Portion of a Cerebrum, with the Optic Nerves, and some remains of the Left Eye. The eye is contracted, in consequence of the escape of its humours, and the left optic nerve is much diminished in size, from the retina to the optic commissure. Between the commissure and the optic thalamus, the nerve on the right side is smaller than that on the left, and the right thalamus is smaller than the left.

From a person who had been blind in the left eye, from childhood, in consequence of small pox.

4. Portion of a Scapula, with the Axillary Nerves and Artery, from a person in whom amputation of the arm at the shoulder-joint had been performed a considerable time before death. The several nerves are firmly united together, and their extremities form hard bulbous swellings, which are adherent in one mass to the cicatrix in the skin.
5. Portion of a Cerebrum, with the Optic Nerves and remains of the Left Eye. The cornea is opaque, and the coats of the eye are collapsed. The left optic nerve is considerably diminished in size between the diseased eye and the optic commissure. Behind the commissure, the nerve on the right side is rather smaller than that on the left; but the thalami appear to be of equal size.
6. Portion of a Cerebrum, with the Optic Nerves and the Eyes. The optic nerves are considerably diminished in size, thin, and flat, in their whole course from the retina to the thalami. The optic thalami are also small. The eyes are reduced in size, from a deficiency of their humours, but are not otherwise altered.
From an aged woman, who had been totally blind for twelve years.
7. Nerves of a Fore-Arm, with the Bones, from a Stump. The extremities of the radial, ulnar, and median nerves form very dense, bulb-like swellings, two of which are closely, and one more distantly, connected with the cicatrix in the skin.
8. Portion of Cerebrum, with the Pons and Medulla Oblongata. Bristles are passed beneath the optic nerves, which are very much attenuated, and which could be traced from the commissure for only a certain distance upon the crura cerebri, and then seemed to terminate in the surrounding medullary substance. The optic thalami are small. The tubercula quadrigemina have undergone no change.
From an aged woman, who had been totally blind for many years.
9. Portion of a Femur, with the ischiatic, and a branch of the anterior crural, nerve attached to it; from a Stump. The ischiatic nerve presents a small bulb-like swelling at its

extremity, which was united by dense cellular tissue to the integument of the stump and to the end of the bone. The branch of the anterior crural nerve presents, in relation to its size, a larger bulb at its extremity, which was united in the same manner to the end of the bone and to the integument. Between the two nerves a triangular and flat spiculum of bone has arisen from the outer surface of the femur.

10. Part of a Humerus, with the several Nerves of the Arm, from a Stump. The nerves present bulbous enlargements at their extremities, which are firmly united together, and to the end of the bone, by dense cellular tissue.
11. The First Bone of a Middle Finger, from a Stump. The digital nerves present bulbous enlargements at their extremities, which are firmly united to the bone.
12. Portion of an Axillary Artery, with the Axillary Plexus of Nerves, and a Tumour connected with them. A section has been made of the tumour, to show its interior, consisting of a soft fleshy substance, some of which appears deposited in cells. A nerve, presumed to be the median, is connected with the tumour at its upper and lower extremities. At its upper end, the filaments of this nerve are expanded over the tumour, in such a manner as to indicate that it commenced within the nerve.

The patient was a middle-aged man. Six years before his death, a ligature was placed upon the subclavian artery, on account of a pulsating tumour then presenting below the clavicle, and supposed to be an aneurism of the axillary artery. The preparation contains the portion of the artery which was obliterated below the seat of the ligature. The artery has been divided, to show the firm coagulum of fibrine which filled it, and was closely adherent to its inner surface, to the extent of about an inch and a half beyond the ligature.

The thorax of the same patient, with the arteries injected, is preserved among the Diseases of Arteries and Veins.

The case is recorded by Mr. Stanley, in the *Medico-Chirurgical Transactions* Vol. xxviii. p. 314, London, 1845.

13. A Median Nerve, in which there is a small oval Tumour, composed apparently of medullary substance of a light brown colour. The tumour was completely imbedded in the sub-

stance of the nerve, the filaments of which are separated and extended around it.

14. Portion of a Radial Nerve, with the Tendons of the Flexor Carpi Radialis and Flexor Longus Pollicis Muscles. Long before death the artery was completely, and the nerve partially, divided. The divided filaments of the nerve have become firmly adherent to the two contiguous tendons. The sensibility of the fingers was unimpaired.

The fore-arm of the same person is preserved among the Diseases of Arteries and Veins.

15. Section of part of a Femur, with the nerves, vessels, and muscles, thirty years after amputation. The medullary cavity is closed for some way above the end of the bone. The extremities of the ischiatic and peroneal nerves are united in one bulb-like enlargement, which is attached to a dense white tissue, continued from the muscle, nerves, and vessels, to the end of the bone.
16. An Ischiatic Nerve, with a small, firm, white Tumour within its sheath. The filaments of the nerve are separated by the tumour, and loosely connected with its surface.
17. A portion of one of the Nerves of a Brachial Plexus, probably one of the roots of the median nerve, with a tumour in its sheath. It was removed, together with a portion of the internal cutaneous nerve which lies upon it. The tumour is of an oval form, nearly an inch in length; it lies completely within the sheath of the nerve, the bundles of nervous filaments being pressed to one side; and it is composed of a pale, uniform, firm, elastic, glistening substance, which appears in one situation somewhat softened.

The patient was a man about twenty-five years old, in whom the tumour had grown slowly, and with much pain in the arm.
18. Portion of the Brain, with the Optic Nerves, of a Horse who had long lost the sight of the left eye. The left optic nerve is diminished in size from the eye to the commissure; and behind the commissure, the nerve on the right side is scarcely more than half as large as that on the left.

SERIES IX.

DISEASES OF THE EYE AND ITS APPENDAGES.

Effects of inflammation of the membranes and humours of the eye, 1, 2, 3, 9, 10, 16.

Diseases of the lacrymal gland, 11, 13, 25.

Tumours within the eye-ball, 4, 5, 6, 7, 8, 18, 19, 23.

in the orbit, 4, 12, 15.

on the conjunctiva, 17, 21.

Atrophy of the optic nerve, 20, 22; and in Series VIII. 3, 5, 6, 8, 18.

1. An Eye, in which the greater part of the pupillary margin of the Iris is adherent to the Cornea.
2. An Eye, in which the Cornea is very small and opaque. The lens and vitreous humour have entirely disappeared. The choroid is thickened; and the retina, collapsed, forms a cord, extending from the entrance of the optic nerve to the surface of an irregular mass of tissue which occupies the former situation of the lens.
3. An Eye, in which the Iris is thick and opaque: a portion of it also was adherent to the Cornea.
4. Section of a Tumour, which filled the cavity of a young person's orbit. The tumour consists throughout of a soft whitish me-

dullary substance, with blotches of effused blood. The eye and optic nerve are imbedded in the centre of the tumour, and are themselves so filled with medullary substance, that no portion of the natural structure of the eye, except the sclerotica, can be distinguished.

5. An Eye, from which all the natural structures have disappeared, giving place to a mass of whitish medullary matter. The recti muscles are connected with the upper part of this mass.

The skull of the same patient, a young person, is preserved in Series XXXV.

6. Section of a Tumour, which was removed with the Eye of an adult. The tumour consists of a mass of soft, greyish, and, apparently, medullary substance, some of which is within the globe, but the greater part, having protruded through the sclerotica, has enlarged and extended round the exterior of the globe. Portions of the choroid membrane and retina may be discerned, apparently unchanged. The retina is reflected over that part of the tumour which is within the globe, indicating that the tumour grew between the retina and choroid.

The woman from whom this specimen was taken, lived for nineteen years after the operation, and the disease did not return. Part of her skull is No. 14, in this Series.

7. Sections of a large lobulated Tumour, which was removed from the cavity of the left orbit of an adult; with a portion of Brain, from the same individual. To the upper part of the sections of the tumour is attached the posterior half of the eye-ball: this is filled by a substance similar to that of the tumour, so that it may be assumed that the tumour began to grow within the eye and protruded through its anterior part. The tumour is, throughout, soft and brain-like in its texture; parts of it are nearly white, and parts are intensely black. It appears also to have been very vascular. In the lower part of the bottle is a portion of the tumour which was extracted from the back part of the orbit: it consists of the same substance as that already described. The optic nerves are connected with the portion of brain; the left nerve has some of the medullary and melanotic

substance attached to it: it is reduced in size as far as the commissure; but beyond this, no change is visible in it.

The patient was an unhealthy man sixty-five years old. The disease had existed about twelve months. He died ten days after the extirpation of the eye; and melanotic disease was found in the liver, sections of which are preserved in Series XVIII. No. 23. The case is related by Mr. Lawrence in his "Treatise on the Diseases of the Eye:" London, 1844, 8vo. p. 720.

8. Sections of an Eye, from an adult. The globe is filled by a soft medullary and melanotic substance, of mingled shades of dusky grey and black, which has also protruded the back part of the sclerótica, forming a nodulated elevation by the side of the optic nerve. The optic nerve is reduced in size, but appears otherwise sound: the lens and iris are pressed against the cornea.

The patient was a man thirty years old, and the disease had been about two years in progress: the globe was slightly enlarged by the growth within it. A year after the extirpation of the eye, the patient was in good health. The case is related by Mr. Lawrence in his "Treatise on the Diseases of the Eye:" London, 1844, 8vo. p. 719.

9. A left Eye, in which there is a large ulcerated aperture in the middle of the Cornea. The pupillary margin of the iris was adherent to this aperture, and is thickened, and appears ragged, by the lymph deposited upon it.

The patient was forty years old, and had a tumour in the left side of the nose, which compressed the origins of the fifth and facial nerves on the same side. Some signs of this tumour had existed for more than a year. She lost sensation and motion on the left side of the face, and motion in the left arm and leg. The hearing and taste were lost on the left side: she was subject to repeated attacks of erysipelatous inflammation of the same side of the face: the left side of the interior of the nose was very vascular, and often discharged blood; and this ulceration of the cornea ensued, in the course of rapidly destructive disease of the eye. The case is related by Mr. Stanley, in the *London Medical Gazette*, Vol. i. p. 531, 1828. Case-Book, Vol. i. p. 123, No. 146.

10. Sections of an Eye, from an adult. The retina has disappeared, and its place is occupied by a thick layer of dense osseous substance.
11. A Lachrymal Gland, of natural size and structure, which, protruding from the orbit so as to be felt through the eye-lid, was removed by operation.

12. Sections of a Tumour, which was removed from the cavity of the orbit, with the eye and the optic nerve. The tumour adheres to the back part and sides of the sclerotica; and the optic nerve, elongated, passes through its axis. The tumour is lobulated, firm, and compact, and it was of a light yellow colour. The recti muscles, unaltered, adhere to it externally. The eye was protruded from the orbit. The humours have escaped through an ulcerated aperture in the cornea. The sclerotica is natural. The retina and the choroid membrane are collapsed, and occupy the axis of the eye between the entrance of the optic nerve and the iris. The space thus left between the choroid and the sclerotica is occupied by a firm clot of blood: and blood is effused in the optic nerve.
13. A Mass of flattened oval form, and upwards of an inch in diameter, which was removed from an orbit. It apparently consists of the lachrymal gland enlarged and changed in structure: its texture is firm: its cut surface is granulated, and intersected by white lines.

The patient was a gentleman twenty-seven years old. The disease commenced five years before the removal of the disease. In a year and a half from its commencement the globe began to be protruded, and in three years, with increased displacement of the globe, the sight became impaired, and was at length totally lost. After the removal of the disease, the eye returned to its position, the patient completely recovered his sight, and remained well. The case is related by Mr. Lawrence, *loc. cit.* p. 802.
14. Portion of the Skull of the Patient, whose left Eye, extirpated nineteen years before death, is preserved in No. 6. The left orbit has undergone no change in either form or size.
15. Sections of an Eye, with a large mass of soft pale medullary substance which filled the orbit. The eye and the optic nerve have undergone no change of structure, but are compressed by the morbid growth, which is closely attached to the posterior part of the sclerotica, and appears to have been wholly external to the eye.

This specimen was removed from an old woman. After the healing of the wound there was a reproduction of the morbid growth.
16. Portion of an Eye, which was removed in a case of Staphyloma.

The whole of the substance taken away projected beyond the sclerotica; it consists of a pale firm mass, in the middle of which is the thickened cornea. Upon its internal surface are some remains of the iris with its black pigment.

17. An Eye, which was removed on account of carcinomatous disease, from a middle-aged man. The tissues of the anterior and inferior third of the eye are occupied by an irregular growth of firm and very vascular substance, with a granulated, warty, and vascular surface. The optic nerve, of which a portion is preserved, is sound.

There was no return of disease in the orbit; but the patient died with medullary tumours in the heart, and in some other parts, two years after the extirpation of the eye. His skull is preserved in Sub-series A. No. 49; part of his dura mater in Series VI. No. 63; his optic nerve in this Series, No. 20; and his heart in Series XII. No. 66.

18. Sections of an Eye, of which the Globe is almost completely filled by a mass of medullary and melanotic substance. The diseased growth appears to have originated between the choroid membrane and the retina. The former still surrounds it; the latter, entire but pressed to one side of the eye, is exhibited in the upper part of the preparation. The lens is pressed forwards into contact with the inner surface of the cornea; the iris forms a narrow ring around its margin. At the back of the preparation are seen two considerable staphylomatous projections of the sclerotica, which, before the removal of the eye, were observable at the lower and outer part of the front of the globe.

The patient was a girl twenty years old. The disease had existed more than six months, and for three months its progress had been attended by extreme pain. She remained well for three years after the operation. Then, melanotic disease was developed in the liver, heart, and many other parts; but the disease did not return in the orbit. A cast of the liver is preserved: a portion of her heart is in Series XII. No. 41; and her pancreas in Series XXI. No. 4. The case is related by Mr. Lawrence in a Clinical Lecture in the *London Medical Gazette*, Vol. xxxvi. p. 961, London, 1845. Case-Book, Vol. i. p. 150, No. 174.

19. An Eye, with which a large Brain-like Tumour is connected. The tumour has protruded to a considerable distance through the eye-lids, which it has completely inverted and pushed back into the orbit. Its anterior part is covered with shreds of soft sloughing tissue. The eye is filled with the diseased structure,

but the sclerotica is shrivelled and contracted. The optic nerve is sound.

The parts were removed after death. The disease had existed for more than two years, and was associated with similar growths in the scalp and bones of the skull. Case-Book, Vol. i. p. 153, No. 178.

Presented by Martin Ware, Esq.

20. The Eye-lids, the remains of the optic nerve, and the other contents of the orbit, from which the Eye No. 17 was removed. The optic nerve terminates by a blunt, but not bulbous, extremity, which is firmly adherent to the surrounding tissues. The eye-lids, muscles, and all the other parts are atrophied and contracted.
21. The Eye-ball of an Ox, in the anterior part of which is a Tumour with hair growing from it. The tumour, which appeared to be composed of fat and condensed cellular tissue covered by skin, grew from the outer half of the cornea and sclerotica. The conjunctiva appeared to be lost in the integument which enveloped the tumour. Long hairs, with true bulbs, grew from the skin on the surface of the tumour. The cornea, where not covered by the diseased growth, was transparent and of its natural thickness and structure: the iris and lens were likewise healthy.
22. The remains of the Optic Nerve, with some of the surrounding tissues, from the patient whose eye is described in No. 18. The sheath of the optic nerve is laid open, displaying the nerve contracted within it, pale and shrivelled, and with no bulbous enlargement at its extremity.
23. Sections of an Eye, with its Globe nearly filled by a medullary and melanotic growth, which also protrudes through the upper and anterior part of the sclerotica, and forms, external to the eye, a mass larger than the eye itself. The part of the tumour within the eye is nearly black: that which is external to it is white, variously shaded with grey and black.
24. Part of the Base of the Brain, from the patient from whom the

eye last described was extirpated. An oval mass of soft, dark-grey, medullary and melanotic substance, (like that external to the eye,) is imbedded on the surface of the brain, and compresses the optic commissure, the left optic nerve, and the left carotid artery. It is loosely connected with the brain; and the adjacent cerebral substance appears unchanged.

The patient was a woman forty-three years old. The signs of the tumour in the eye had existed about two years. The protrusion through the sclerotica had been increasing for nine months, when the eye was removed. At the time of the operation it was observed that the optic nerve, though divided close to its entrance into the orbit, contained scattered melanotic deposits. There was no reproduction of the disease in the orbit; but the patient died with this tumour at the base of the brain six months after the removal of the eye. The case is described by Mr. Lawrence, in a Clinical Lecture in the *London Medical Gazette*, Vol. xxxvi. p. 964, London, 1845.

The brain was presented by S. Freeman, Esq.

25. A Lacrymal Gland, enlarged so as to form an oval mass, an inch in length and more than half an inch in width. It retains its lobular form and glandular appearance; and the disease seems to have consisted in a simple increase of the gland, without change of texture.

The patient was a lady forty-five years old. The enlargement of the gland had made progress for several years. She recovered after the removal of the gland.

SERIES X.

DISEASES OF THE EAR.

1. SECTION of an Ear, exhibiting a growth of substance, like firm granulations, from the membranous lining of the tympanum. A portion of the growth is firmly adherent to the membrana tympani.
2. A Temporal Bone, in which ulceration has extended from the meatus auditorius externus, through the greater part of the base of the petrous portion of the bone, and has destroyed nearly all the cavity of the internal ear.
3. A Fleishy Excrescence, or Polypus, which was removed from the inside of the meatus auditorius externus. Part of its surface is smooth; the rest is nodular and warty.
4. A similar, but smaller, Specimen. It is suspended by the narrow pedicle which attached it to the lining of the meatus.
5. Portion of the left Temporal Bone of a young man. A section has been made along the meatus auditorius externus, and through the cavity of the tympanum. The membrana tympani is very much thickened, and there is an ulcerated aperture near its anterior margin, through which a bristle is passed into the cavity of the tympanum. Another bristle is passed through a passage formed by ulceration, which leads from the tympanum

to the anterior surface of the petrous portion of the temporal bone, and is thence continued through an aperture in the adjacent part of the squamous portion.

The patient had purulent discharge from the ear for many years. Two days before his death, after having long suffered from intense head-ache, he was suddenly affected by paralysis of the right leg; then of the right hand; and gradually became comatose. Pus was found in the cavity of the cerebral arachnoid; and the longitudinal, lateral, and petrosal sinuses were full of lymph and pus. *Casc-Book*, Vol. i. p. 177, No. 201.

6. An elongated oval Polypus, consisting of a pale, succulent, soft, fleshy substance, which was attached by a narrow pedicle to the interior of the meatus auditorius externus.

SERIES XI.

INJURIES AND DISEASES OF THE SKIN AND ITS APPENDAGES.

- Inflammation, 4, 21, 24.
 - Eruptive diseases, 20.
 - Cicatrices, 11, 13, 14, 15.
 - diseased, 22, 32, 33.
 - Warts and analogous diseases, 2, 3, 9.
 - Cutaneous cysts : see Series XXXV.
 - Tumours formed by increased growth of the cutaneous tissue, 18, 19; Series XXVII.
 - 1, 2; and Series XXXII. 66, 67.
 - Painful subcutaneous tumour, 30, 31.
 - Cancer.
 - Warty (including Chimney-sweepers' Cancer), 6, 7, 25, 26, 27.
 - Hard cancer, Series VI. 57.
 - Medullary Cancer, 10.
 - Melanotic, 1, 8.
 - See also the specimens of cancer of the scrotum, penis, labia, and clitoris ; some of the specimens in Series XXXV. ; and in Series I. Nos. 29, 42, 124, 125, 126, 127.
 - Corns and other diseases of the cuticle, 3, 4, 21, 28, 29.
 - Nævus, 5, 12, 23.
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1. PORTION of Skin which was removed from the fore-arm. A lobulated, soft, brown, spongy, growth is attached by a narrow base to the skin ; and in the cellular tissue beneath the skin there is a tumour, about the size of a pea, soft and nearly black. It appeared that the external growth, originating from this tumour, had thence extended through an ulcerated opening in the skin.

2. A large mass of Warts, removed from around the margin of the anus.
3. Part of a warty growth on the skin. The cuticle is in part separated and turned downwards, to show that it is greatly increased in thickness.
4. Section of a Foot, upon which a Corn was situated over the ball of the Great Toe. The cuticle is removed to show that the disease is confined to a thickening of that part. The cutis beneath the corn is natural, except that its vascularity is increased, and its surface impressed.
5. A large portion of Skin, removed from a Woman's back. It presents an irregular warty growth, which consists of numerous very densely-set processes, elevated on narrow pedicles.

This growth had existed from infancy; it was very vascular, and had the general aspect of a large *nævus*. Case-Book, Vol. i. p. 11, No. 23.

6. A Hand, with part of the Fore-arm, which were removed on account of a growth covering nearly half the surface of the skin. The growth is warty, very vascular, superficially ulcerated, with an everted sinuous margin. It bears a close resemblance to an ulcerated cancer of the scrotum in chimney sweeps.

The patient was forty-nine years old. Five years before the amputation of his hand he was employed as a gardener in strewing soot over the ground for several mornings in succession; a warty growth then formed; and it increased and ulcerated in the spring of both the two following years, while he was similarly employed. After this, though he was no longer in contact with soot, the disease increased till it was removed. After the operation he completely recovered. The case is related by Sir James Earle, in his edition of Mr. Pott's Works. London, 1808, Vol. iii. p. 182.

7. A Hand, with part of the Fore-arm, which were removed on account of extensive ulceration of a carcinomatous character, which appears to have commenced in the skin.
8. Portion of Skin, with a large lobulated, dark-coloured growth,

like melanosis, which was believed to have originated in the interior of an encysted tumour.

9. A mass of Warts, removed from the skin around the anus.

10. Portion of a Scalp, in the substance of which there are several small circumscribed deposits of soft medullary substance.

From the same patient as a medullary tumour of the mediastinum, in Series XXXV.

11. A Hand, in which (in consequence of an injury) a part of the Thumb was lost, and the integuments of the palm and the fingers were contracted in the process of cicatrization.

12. Portion of Skin, removed from the side of a girl's neck. Its surface is covered by an irregular warty growth, which had existed from birth, and during life appeared very vascular, and like a nævus.

13. Portion of Skin, exhibiting its greater degree of vascularity in the situation of a recent cicatrix.

14. Portion of Skin, exhibiting the same fact as No. 13.

15. A similar preparation.

16. A Curved Horny Growth, with the portion of Scalp from which it has arisen. A section of the growth at its base shows that it here consists of a soft white substance, which, in the recent state, resembled the contents of a cutaneous encysted tumour; the rest of the growth is hard, coarsely fibrous, fasciculated, and of dull greyish colour.

17. Portions of the Horny Growth, which were removed at various times before the removal of that last described.

The patient was an old woman. The horn had been growing for some years before it was removed. The patient herself removed the portions contained in No. 17.

18. A large round pendulous Growth, removed from the end of a

nose. A section of the growth shows that it is soft and elastic, and consists of compact obscurely fibrous tissue like the outer layers of healthy skin. Bristles are introduced into the orifices of several enlarged hair-follicles on the surface of the growth.

19. Two large warty growths of tissue like soft skin, which were removed from the labia pudendi.

20. Portions of a Foot, exhibiting in the cuticle and cutis the appearances produced by small-pox pustules.

Presented by Richard Partridge, Esq.

21. Portion of a Foot, upon which there are two corns. The cuticle has been separated. In each corn the cuticle is thick and horny; and from one of them a short horny growth projects outwards. The cutis beneath the corns is thickened and very vascular.

22. Portion of Skin removed from the Neck. It includes an elevated cicatrix which formed after the healing of a burn. A section of the diseased part shows it to consist of a dense fibrous tissue.

23. Portion of Skin removed from the posterior and lower part of the trunk of a middle-aged Woman. A large portion of skin, originally occupied by a *nævus*, has undergone the following changes. It presents an irregular warty surface, composed of a multitude of densely set, lobulated, growths, which are for the most part elevated on narrow pedicles. The whole are covered by a thin layer of dark cuticle, detached portions of which fill up in great measure the interspaces between the several growths. About the centre of the portion of skin, there is a pendulous tumour, of the same characters as the others, but of much larger size. They are all composed of a dense cellular tissue, similar to that of the outer layer of cutis.

Presented by William Taylor, Esq.

24. Section of the integuments of a head and of a portion of the temporal muscle. The cellular tissue between the skin and the temporal fascia is greatly thickened by a deposit of lymph and pus within its texture.

From a man who died with phlegmonous erysipelas of the scalp, consequent on a contused wound.

25. Portion of a Scalp, which was removed by operation. A circumscribed growth of white colour, and dense texture, with an ulcerated surface, originating in the skin, has extended to its adherent and free surfaces.

26. A Portion of Skin removed from the dorsum of the penis of a chimney-sweeper, and exhibiting an oval elevated ulcer, with a hard and irregularly nodulated surface. Beneath the ulcer the tissue down to the corpus cavernosum is as hard as cartilage.

27. Portion of Skin from the outer and back part of the Wrist, on which there is a large oval cancerous ulcer, with hard sinuous everted edges, and covered by granulations. The cancerous disease extended to the ligament of the first joint of the thumb.

The patient, a man eighty years old, recovered after amputation of the fore arm.

28. A Portion of Skin, from a Leg affected with Ichthyosis Simplex. The most obvious characters of the disease are due to small, round, or polygonal, nodules of diseased cuticle, very closely arranged, so as to give a tessellated character to the surface. The subjacent cutis, exposed by the removal of some of the nodules, is rough, hard, and covered by a thin layer of cuticle.

29. The Great Toe of the same patient similarly diseased; but the diseased cuticle has no regular arrangement, and is in various parts deeply fissured.

The patient was a gentleman forty-six years old. He had been subject to the disease from his birth: but had been a lunatic (in consequence, it was believed, of a blow in the head) for three years before his death.

Presented by J. R. Diamond, Esq.

30. Portion of Skin from a Leg. A small circumscribed oval tumour is imbedded in the sub-cutaneous fat, and is fixed to the inferior surface of the cutis. It is composed of a pale, greyish, glistening substance intersected by white lines. The surrounding tissues appear healthy.

It was removed from a middle-aged woman, and had been the seat of very great pain.

31. A similar specimen.

Removed after death, from the leg of a young woman.

32. Portion of Skin, in which a cicatrix formed after a burn. The substance of the cicatrix is indurated and enlarged, so that it forms an oval narrow-based tumour, which projects half an inch above the surface of the skin.

33. A similar enlarged and indurated cicatrix, formed after the healing of a burn on the back of a young girl. A section shows that the cicatrix consists of a very dense tough substance, in which shining white bands are interwoven in a coarse net-work in a greyish tissue, closely resembling the substance of a fibrous tumour.

S E R I E S X I I .

INJURIES AND DISEASES OF THE HEART, OF ITS VALVES, AND OF THE PERICARDIUM.

DISEASES OF THE PERICARDIUM.

Inflammation and its effects.

Effusion of lymph, 1, 2, 3, 4, 5, 7, 8, 34, 39, 43, 45, 50, 56.

Organized adhesions, 3, 6, 32, 58, 59, 60.

Thickening and induration, 2, 3, 59, 60.

DISEASES OF THE HEART.

Hypertrophy of one or more parts of the heart, 2, 3, 4, 5, 6, 8, 9, 17, 28, 36, 37, 44, 45, 51, 59, 63, 68.

Dilatation of one or more parts of the heart, without proportionate hypertrophy, 10, 11, 19, 24.

Atrophy of the heart.

With simple reduction of size, 57.

With fatty degeneration, 12, 22, 27 ? 37 ?

Rupture of the heart.

By external violence, 54.

In consequence of disease, 22, 27, 37, 58 ?

Aneurism, (partial dilatation of one of the cavities), of the heart.

Of the left ventricle, 18, 28, 30, 42, 53, 58, 65 ?

Of the left auricle, 19, 51.

Inflammation of the substance of the heart (Carditis), 14.

„ „ lining membrane (Endocarditis), 6, 14, 33; and many specimens of diseases of the valves.

Ossification, (formation of bone-like tissue in the substance), of the heart, 31, 47.

Tumours and other allied morbid growths.

Organized ? masses of fibrine attached to the internal surface of the heart, 13, 25, 35.

Medullary cancer, 23, 29, 60.

Melanosis, 41, 46.

Tubercle, 61.

Hydatids, 40.

Deposits of uncertain nature, 23, 53, 65.

DISEASES OF THE VALVES.

Simple thickening and induration, 4, 6, 7, 24, 26, 33, 44, 49, 51, 52, 59, 63.

Fibrinous deposits (vegetations) on the surfaces, 6, 17, 20, 21, 55, 62, 68, 69.

Deposits of earthy matter in and upon the valves, 11, 15, 16, 38, 42, 63, 64, 66, 67, 68.

Ulceration, 17, 21, 62?

Aneurism, 62.

Diseases of the tricuspid valves, 44, 59.

pulmonary, 55, 59, 63, 68.

mitral, 4, 6, 7, 16, 19, 24, 26, 31, 33, 39, 44, 49, 51, 59, 62, 63, 69.

aortic, 6, 7, 11, 15, 17, 20, 21, 33, 38, 39, 42, 52, 59, 63, 64, 66, 67, 69.

Of these diseased valves, Nos. 11, 17, 21, 63, 64, 67 are instances in which there are only two valves in the aorta; and in Nos. 55, 63, and 68, the pulmonary artery has only two valves.

Diseases of the Coronary arteries, 12, 37, 48.

Permanent openness of the foramen ovale, 36.

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1. A HEART, on the surface of which, as well as on the interior of the reflected pericardium, there is an abundant deposit of soft lymph. The outer surface of the lymph is reticulated; its attached surface is loosely adherent.

From a child sixteen months old, who died after a few days' illness. Case-Book, Vol. i. p. 11, No. 24.

2. A Heart, with the sac of the Pericardium. The heart is generally enlarged, and lymph is abundantly deposited on both surfaces of the pericardium. The lymph is firm and closely adherent; part of its surface is regularly reticular; another part forms granular and warty eminences. The reflected pericardium is thickened and indurated.
3. A Heart, on which both layers of the Pericardium were completely adherent. A part of the reflected pericardium has been removed to show some apparently recent lymph beneath it. The heart is enlarged.
4. A Heart, with an abundant recent deposit of lymph upon the Pericardium. The lymph is deposited in a moderately firm layer, about a line thick, from the surface of which arise numerous growths, some of which are attached by slender pedicles. The bicuspid and aortic valves are thickened. The

whole heart is enlarged. Its vessels are injected, but it is doubtful whether any of the injection has penetrated the lymph.

The patient, a woman twenty-five years old, was attacked with signs of pericarditis, during recovery from acute rheumatism. These were subdued, and she appeared convalescent, when a second similar attack ensued, and was speedily fatal. Case-Book, Vol. i. p. 11, No. 26.

5. A Heart, with layers of recent lymph over the whole free surface of the Pericardium. A thin and transparent membrane has been formed over the lymph which covers the reflected pericardium. The lymph presents a reticulated surface. The heart is slightly enlarged.

From a patient who had acute rheumatism.

6. A Heart, on which there is a general and close adhesion of the Pericardium. The adhesions are completely organized. The aortic valves are thickened, contracted and recurved; and there is a warty mass of fibrine on one of them. The lining membrane of the aorta, and that of the heart below the aortic valves, are thickened and opaque. The left ventricle is dilated, and its walls are thickened.
7. A Heart, with a very abundant deposit of lymph over the whole free surface of the Pericardium. The lymph forms fine branching and shreddy processes of considerable length, which hang loosely within the sac of the pericardium. The heart is not materially enlarged.
8. A Heart, with Lymph deposited in thick layers, and in a coarsely reticular form, upon the surface of the pericardium. The lymph appears soft, and blood is effused in many parts of it. The heart is much enlarged.
9. A Heart, exhibiting great enlargement of the cavity of the left ventricle, and a proportionate increase of the thickness of its walls. The aortic valves and the internal coat of the aorta are slightly thickened and opaque.
10. A Heart, in which the cavities of both Ventricles are enlarged,

while their walls are thinner than is natural. The walls of the right ventricle are especially diminished in thickness. The valves on both sides of the heart are healthy.

The patient was a man thirty-four years old. The case is related by Mr. James, in the *Medico-Chirurgical Transactions*, Vol. viii. p. 449, London, 1817. Case-Book, Vol. i. p. 13, No. 28.

11. Part of a Heart, exhibiting the Aortic Valves thickened, opaque, and made rigid by the abundant deposit of earthy matter in them. The communication between the ventricle and the aorta is nearly closed by the diseased valves; a mere fissure is left between them, and the narrow nearly linear form of this fissure, as well as the general appearance and form of the valves, indicates that there are but two, instead of three, valves. The mitral valve is healthy. The left ventricle is dilated, but the walls are not thickened.

12. A Heart, exhibiting great enlargement of the cavity of the left ventricle, with thickening of its walls. There is abundant formation of fat on the whole exterior of the heart; on the right ventricle it forms a layer half an inch in thickness. The coronary arteries are not ossified. The aortic and mitral valves are large and thin, but appear of healthy texture.

The patient, a man twenty-five years old, attributed the origin of his disease to a fit of passion twelve months before his death. He shortly after observed unnaturally strong pulsations in all his large arteries and at his heart. These continued till his death, all the arteries appearing to be dilated. He had also great dyspnoea aggravated in paroxysms, during which he was in the habit of taking large quantities of digitalis. Case-Book, Vol. i. p. 12, No. 27.

13. A Left Ventricle, in which there are several round and oval portions of fibrine firmly adhering to its internal surface, among the fleshy columns near the apex. The two largest portions present cavities which contained a fluid resembling pus.

From a man thirty-five years old, who died with phthisis. Case-Book, Vol. i. p. 13, No. 29.

14. Section of a left Ventricle. Its membranous lining is partly ulcerated, and partly thickened with deposits of earthy matter; pus is extensively diffused through the muscular structure at the apex of the ventricle.

15. Part of an Aorta, with its valves adherent by their margins, thickened, opaque, and made quite rigid by deposits of earthy matter. A narrow central aperture alone remains for the communication of the ventricle with the aorta.
16. A Mitral Valve, with portions of the Aorta. On a large portion of the mitral valve and on the arch of the aorta there are abundant deposits of earthy matter. The aortic valves, and the portion of the mitral valve adjacent to them, are but little affected with the same disease.
17. A Heart, exhibiting numerous warty masses of brown firm fibrine on the aortic valves. Behind one of the valves, the aorta is dilated into a pouch, and its inner membrane is here ulcerated. There are but two valves; both are of unusually large size, thick, opaque, and somewhat recurved.

From a man, aged twenty-five.
18. A Left Ventricle ruptured at its apex; a quill is introduced into the aperture. Around the aperture, the walls of the ventricle are very thin, and appear to have been dilated into a kind of aneurismal sac, before the rupture took place. The aperture is nearly filled by a round firm clot of blood.
19. Part of a Heart, exhibiting thickening and rigidity of the mitral valve and of its tendinous chords, with extreme contraction of the left auriculo-ventricular opening. The cavity of the left auricle is enlarged; its lining membrane is opaque and thickened; and a thick layer of dry laminated coagulum is firmly attached to the upper and posterior part of its walls, where it is rather more dilated than elsewhere.
20. Aortic Valves, with numerous firm, pale, warty excrescences or *vegetations* attached to their free borders, and to part of their adjacent surfaces.
21. Aortic Valves, with numerous similar excrescences attached to their surfaces. One of the valves is extensively ulcerated, and

is of very large size, comprising the extent of two valves incompletely subdivided.

22. A Left Ventricle ruptured. The opening is a mere fissure through the muscular substance, at the junction of the anterior wall with the septum, near the middle of the heart. The walls of the ventricle around the opening are not thinner than in other situations: but the muscular substance is softer than is natural, and of a brown colour. There are numerous small deposits of fatty matter beneath the lining of the aorta, and of the left ventricle; and the quantity of fat on the exterior of the heart is greater than is natural.
23. Section of a Left Ventricle, showing several small deposits of soft medullary substance between its muscular fibres.
From the same person as No. 10 in Series XI.
24. Part of a Heart, exhibiting thickening and opacity of the mitral valve. The left auriculo-ventricular opening is contracted into a narrow crescentic fissure. The cavity of the left auricle is much enlarged, and its walls are thickened. The right ventricle is also dilated; but its walls are not increased in thickness.
25. Part of a Heart, with a small portion of lymph attached to the inside of the right auricle and, apparently, organized. A section has been made of the lymph, to show that it is so closely united to the lining membrane of the auricle that the boundary between them cannot be discerned.
26. Part of a Heart, exhibiting thickening, opacity, and rigidity of the mitral valve and its tendinous chords. The left auriculo-ventricular opening has the form of a narrow crescentic opening, with the horns of the crescent directed, as usual, towards the aortic valves.
27. A Left Ventricle ruptured about mid-distance between its base and apex, and near the juncture of its anterior wall with the septum. The aperture is of considerable extent; and

around it, the walls of the ventricle are of their natural thickness. The muscular substance appears soft, and of a dull brown colour. Earthy matter is deposited in the coats of the aorta.

28. A Left Ventricle and Auricle. In the boundary between the auricle and ventricle the wall of the heart is dilated into a pouch, like an aneurism, which extends round the outer part of the base of the left ventricle, from the anterior to the posterior margins of the septum. The mouth of this pouch is just below, and partly covered by, the mitral valve: its cavity is half filled by concentric layers of fibrine. The cavity of the left ventricle is much enlarged; its walls are thickened; and its lining membrane, near the aneurismal sac, is thick, rough, and has yellow deposits in it. The exterior of the heart is covered by adhesions, which fixed it closely to the inner surface of the pericardium. The mitral valve and its tendinous chords are thickened and opaque, especially in those parts which are stretched over the mouth of the aneurismal sac.

The patient was a man between forty and fifty years old. He had long suffered with signs of diseased heart. Case-Book, Vol. i. p. 175, No. 199.

29. A Heart, with numerous small soft tumours beneath the layer of the pericardium covering the heart, and beneath the membrane lining its cavities.

The case is described as one of "Tuberculated Sarcoma," by Mr. Abernethy, in his *Surgical Observations; On Tumours*, Vol. ii. p. 53. London, 1810.

30. Section of a Left Ventricle, with a shallow Aneurismal Pouch at its side. The inner surface of the pouch is smooth, and, apparently, formed by the lining of the ventricle partially covered by layers of fibrine. The pericardium is adherent to its outer surface.
31. Section of a Left Ventricle, exhibiting a large nodulated and granular mass of substance, like bone, in the tissue around the attachment of the mitral valve.
32. Portion of a Heart encircled at its base by a broad irregular plate of bone-like substance, which occupied the place of the

external or reflected portion of the pericardium. The pericardium in the rest of its extent was firmly adherent to the heart by false membrane, which had in some parts a hardness equal to that of cartilage. The internal parts of the heart appear sound.

33. A Heart exhibiting changes of structure in several of its internal parts. The lining membrane of the right auricle is thickened and opaque; and that of the left auricle has undergone the same changes in a much greater degree. The tricuspid, mitral, and aortic valves are thickened. The mitral valve is hard and rigid, and earthy matter is deposited along its free margin. The free margins of the aortic valves also are very thick, round, and re-curved. The cavity of the left auricle is enlarged; and upon its internal surface, near the appendix, was a mass of fibrine, on the removal of which the membrane beneath was found rough and otherwise changed. Both the ventricles also are enlarged; but their walls are not proportionately thickened.

34. The Heart of a Child eight months old, with an abundant recent deposit of lymph over the whole free surface of the pericardium. The external portion of the pericardium is thickened. The heart is not enlarged.

Case-Book, Vol. i. p. 38, No. 73.

35. Portion of a Heart in which there is a round Tumour growing from the inside of the left auricle, near the fossa ovalis. When recent, the tumour was, in texture, like a gelatinous polypus of the nose, yellowish, but spotted with blood, semi-transparent, uniform, and smooth on its cut surface. On detaching a portion of the tumour from the lining of the auricle, this was left rough and otherwise altered in its texture.

From a man thirty years old, who died with fracture of his pelvis received on the day before his death. Case-Book, Vol. i. p. 38, No. 74.

36. A Heart, in which there is a large oval opening in the septum between the auricles. The opening is an inch in diameter, and

not valvular. The heart is enlarged, and all its parts appear increased in equal proportion.

The patient, a woman thirty years old, had good health till within a few months before death, when she began to have signs of disease of the heart, which gradually increased. Case-Book, Vol. i. p. 110, No. 137.

37. Heart of an Adult. The cavity of the right auricle is larger than natural, and its membranous lining is thick and opaque. The tricuspid valve is thickened. The cavity of the left ventricle is larger than natural. Its muscular substance is considerably thickened, and its lining is opaque. The aortic valves are a little thickened, and there is soft matter deposited beneath the lining of the aorta just above the valves. The coronary arteries are thickened, and there is earthy matter deposited between their coats. A rupture of the septum between the ventricles has taken place near its union with the posterior wall of the heart, by which a free communication is formed between the ventricles. On the side of the left ventricle the opening is about two inches in length and of a semilunar form. On the side of the right ventricle, the opening is much smaller and rounded.

38. Aortic Valves, with abundant deposit of earthy matter in their tissue and upon their surfaces.

39. A Heart, exhibiting the effects of inflammation of the pericardium, with hypertrophy of its muscular substance, and disease of its valves. The pericardium is thickened; lymph is deposited over its free surface; and, in one situation, the pericardium is adherent to the heart. The walls of the left ventricle are considerably increased in thickness, and its cavity is enlarged. The mitral and aortic valves are thickened and opaque.

From a boy twelve years old, who had many attacks of rheumatism.

Presented by S. G. Lawrance, Esq.

40. A Heart, exhibiting a collection of Acephalocyst Hydatids between the lining membrane and the muscular substance forming the posterior wall of the right ventricle. The hydatids are contained in a distinct cyst, between two and three

inches in diameter, a portion of which is turned downwards. The cyst projects into the lower part of the right ventricle, and gives a rounded form to the apex of the heart.

The patient was a woman forty years old. Her health had appeared declining for some years; and about eighteen months before her death she began to have dyspnoea on exertion and occasional pain at the heart. Six weeks before death more severe signs of disease of the heart were brought on by an unusual exertion, and these continued and were aggravated till she died. The case is related by Mr. Evans, and the preparation is engraved, in the *Medico-Chirurgical Transactions*, Vol. xvii. p. 507, London, 1832. Case-Book, Vol. i. p. 59, No. 105.

Presented by Herbert Evans, Esq.

41. Part of the Heart of the young Woman from whom the melanotic eye in Series IX. No. 18 was extirpated. It presents several small round masses of melanotic substance imbedded in the muscular substance, and one projecting into the cavity of the left ventricle.

42. Portion of an Aorta, exhibiting a large oval mass of fibrine mixed with earthy matter upon each of its semilunar valves. Below and behind one of the valves there is a small circumscribed pouch, into which a piece of glass is introduced. It is smoothly lined by a prolongation of the internal lining of the heart.

From a girl eighteen years old.

Presented by P. C. Delagarde, Esq.

43. A Heart and Pericardium, from a child nine years old. The external portion of the pericardium is greatly dilated and thickened, and there is an abundant deposit of lymph upon its internal surface, as well as upon that of the pericardium covering the heart. At the lower part of the bottle is a large mass of lymph, which was loose in the pericardium. Besides lymph, the pericardium contained two pints of turbid serous fluid.

Presented by Dr. Moore.

44. A Heart, exhibiting thickening, opacity, and rigidity of the tricuspid and mitral valves, with contraction of both the auriculo-ventricular orifices. The cavities of the auricles are dilated, and their membranous linings are thickened. The right auriculo-ventricular orifice would just admit the passage

of the fore finger; the left would but admit the entrance of the tip of the same finger.

45. A Heart and Pericardium. Lymph is deposited in a thin layer, minutely reticulated, and with some columnar processes attached to it, both upon the inner surface of the external portion of the pericardium and upon the surface of that which covers the heart. The heart is considerably enlarged.

46. Section of a Heart, in every part of which there are minute deposits of melanotic substance. Some of these deposits are beneath the pericardium, others beneath the membrane lining both the auricles and ventricles, and others are imbedded in the muscular substance. Some minute deposits of the melanotic substance are seen beneath the lining membrane of a portion of the vena cava superior which is attached to the heart.

The other section of this heart is preserved in the Museum of the Royal College of Surgeons of England.

A melanotic tumour from the skin of the same patient is in Series XXXV., and the history of the case is added to its description.

Presented by Dr. Norris.

47. A Heart, in which there is abundant formation of bone-like tissue in the pericardium covering both the auricles and ventricles. In some situations there are lines of osseous substance corresponding with the course of the coronary vessels; but, from a careful examination in the recent state, it appeared that the osseous substance had been deposited, not in those vessels, but in the cellular and adipose tissue around them.

From a man aged twenty-one years.

Presented by E. A. Lloyd, Esq.

48. Coronary Arteries from the heart of a man who had been the subject of Angina Pectoris. Earthy matter is abundantly deposited in the coats of both the arteries, but their canals are free. The alteration was confined to the first divisions of the coronary arteries; their smaller branches were sound.

49. Portion of the Heart of an adult. The mitral valve and its

tendinous chords are greatly thickened, opaque, shortened, and nearly rigid. The aortic valves are thickened, and united by their adjacent edges, so that only a very small circular aperture was left between them for the passage of the blood. The walls of the left ventricle are of their natural thickness, but the fleshy columns connected with the mitral valve are hypertrophied.

50. Section of a Heart, with the corresponding portion of the Pericardium. The pericardial sac was completely filled by lymph, of which this section shows a layer nearly an inch in thickness at one part.
51. Part of a Heart, exhibiting a great dilatation of the left auricle, with thickening of its membranous lining, and with thickening, induration, and contraction of the mitral valve and tendinous chords. Portions of fibrine, arranged in concentric layers, adhere to the thickened membranous lining of a part of the auricle which is more dilated than the rest.

The patient was a woman forty-one years old, who had been for some years subject to rheumatism, and had signs of diseased heart for twenty months before her death. Case-Book, Vol. i. p. 158, No. 184.

52. A Heart from a child aged four years. The aortic valves are opaque and thickened, and their free margins are curled backward towards the artery. Two of the valves are closely united by their adjacent margins.
53. A Heart, exhibiting a pouch formed by dilatation of a circular portion of the anterior wall of the left ventricle near its base. The pouch was filled by laminated coagulum; its mouth is round, narrow, and smooth; and its parietes, apparently, consist of the serous covering and inner membrane of the heart, thickened, united, and having small deposits of a soft yellowish substance in and around them. The muscular tissue of this part has entirely disappeared. The coagulum which was within the pouch is at the bottom of the bottle.

The patient was a girl nineteen years old. The disease of the heart probably commenced about eighteen months before death; but its progress was marked by

various and singular attacks of paralysis, cramp, and signs of phlebitis. Case-Book, Vol. i. p. 160, No. 186.

54. A Heart and large Vessels, with the Trachea, and a portion of the left Lung, from a child six years old. An irregular rent extends through the whole length and thickness of the posterior wall of the left ventricle and auricle. A similar laceration extends through the upper part of the anterior wall of the left ventricle, and through the adjacent part of the septum. The left bronchus is torn across near the root of the lung.

These injuries were the results of the passage of a heavy wheel over the chest of the child. Some of the ribs were fractured, but the pericardium was not torn. General emphysema was produced by the escape of air from the ruptured bronchus.

55. A Heart, in which there are but two pulmonary semilunar Valves, and both of these are covered with thick irregular layers of soft fibrine or lymph, which is deposited in such quantity on the posterior valve, that it forms a layer extending quite across the artery. On the internal wall of the artery there are several small wart-like bodies, which are firmly adherent to it; and behind the posterior valve, there is a circumscribed ulceration of the inner membrane. The rest of the heart, its other valves, and the large vessels, are healthy.

The patient was a girl twenty-one years old, admitted in a state of extreme debility. She had violent palpitation of the heart; and a loud bellows-sound, accompanying the first sound of the heart, was heard most distinctly at the base and in a line extending thence upwards and to the left. She died exhausted; with old coagula, filling many of the branches of the pulmonary artery, and with pulmonary apoplexy, of which specimens are preserved in Series XIV. No. 8. The case is related by Mr. Paget, in the *Medico-Chirurgical Transactions*, Vol. xxvii. p. 182, London, 1844.

56. A Heart and Pericardium, from a child fifteen months old. Both the layers of pericardium are covered by a thick coating of soft lymph. The lymph on the heart has a coarsely reticular surface; that on the external portion of pericardium is in a thinner and smoother layer; and the two are connected at the base of the heart, by several columns of lymph passing from the one to the other.

Presented by Dr. West.

57. A Heart, very much reduced in size, but in which the proportions of its several parts are preserved, and its tissue appears healthy. It weighed five ounces and four drachms. It measured a little less than four inches across the base, and five inches and a quarter from the base to the apex.

From a man fifty years old, of middle stature, who died with carcinoma of the stomach, in a state of extreme emaciation.

58. A Heart, with a Sac attached to the left side of its left ventricle. The sac is spheroidal in form, and upwards of three inches in its greater diameter. Its walls are composed of the exterior of the ventricle, the pericardium, and a dense tissue by which the opposite surfaces of the pericardium were adherent. It is lined by irregularly laminated coagula: the phrenic nerve runs over its anterior part; it communicates with the cavity of the ventricle by an oval aperture, about a quarter of an inch in diameter, the margins of which are smooth and round. A portion of white glass is passed through this aperture. The muscular substance of the ventricle immediately around the aperture has disappeared, and is replaced by a dense white tissue. The rest of the heart is healthy: but its exterior is covered by false membrane by which it adhered to the pericardium.

It may be presumed, that there was in this case a rupture, or an ulceration, through the wall of the left ventricle; that the blood was prevented from being effused into the cavity of the pericardium, by adhesions previously formed between its two surfaces; and that these adhesions, and the pericardium for a considerable distance around the aperture, were stretched by the force of the blood, so as to form the sac, in nearly the same manner as a false aneurism is formed after the destruction of the coats of an artery by the distension of its sheath.

From a woman thirty-seven years old, who had had syphilis for many years in its worst form. She had long been under observation at the Penitentiary; but had presented no distinct sign of disease of the heart. She died with dysentery and slight bronchitis.

Presented by Dr. Baly.

59. A Heart, in which, by thickening and contraction of the mitral valves and its tendinous chords, the left auriculo-ventricular

orifice is reduced to an irregular chink, about an inch long, and from one to two lines in width. On the auricular surface of the diseased valves there are also projections of earthy matter, and deposits of layers of fibrine. The lining membrane of the left auricle is thickened and opaque: so also are the tricuspid and pulmonary valves, and, in a much greater degree, the aortic valves. The pericardium was universally adherent, and in several places, especially on the anterior surface of the ventricles, portions of bone have been formed in the adhesions. Some of these have been exposed by dissection. The whole heart is enlarged, all its cavities being dilated and hypertrophied in nearly equal proportions.

From a man twenty-seven years old. He could not remember to have been ever free from signs of disease of the heart, but they were greatly aggravated after an attack of acute rheumatism. Case-Book, Vol. i. p. 189, No. 209.

60. Part of a Heart, in which there is a large mass of firm medullary matter in the substance of the apex of the right ventricle, and of the septum. The morbid mass has not altered the external form of the heart, but it projects with a coarsely granular surface into the cavity of the ventricle, and has raised up the tricuspid valve: in its middle, its substance is softened and broken down. The pericardium is in every part closely adherent. The aorta is dilated, and both it and its valves have earthy deposits in them.

From the patient, from whom the eye, Series IX. No. 17, was extirpated. He died two years after the operation with this medullary disease of the heart, similar deposits in the lungs, and a large medullary tumour on the lower jaw.

61. Portions of the left Ventricle of a Heart, in the middle of the muscular substance of which there is a small spherical mass of tuberculous matter, about two lines in diameter. The surrounding tissue is healthy.

From a negro, thirty years old, who had tuberculous disease of the lungs, liver, spleen, and intestines.

62. A Mitral Valve, with some of the adjacent parts. The substance of the valve is generally somewhat thickened; and the middle of its left portion has been distended into a small bilocular pouch, like an aneurism. The pouch projects into the cavity of the left auricle: it is about three-quarters of

an inch high, and half an inch wide: its orifice on the ventricular surface of the valve, is about a quarter of an inch in diameter. It has burst by a large irregular rent in one of its lateral walls. The aortic valves have numerous warty growths on their outer surface and borders; but are otherwise healthy.

63. Part of an exceedingly large Heart. There are only two pulmonary and two aortic valves, but they are all of large size. The tricuspid and pulmonary valves present some opaque thickening of their tissue, but are pliant and free. The mitral valve is thick, opaque, and very tough; its tendinous chords also are thickened. The aortic valves are thickened, indurated, contracted, and made completely rigid by masses of coarsely granular earthy matter deposited in and upon them. The whole heart is enlarged, but its several parts are increased in nearly proportionate degrees. The pulmonary artery and the aorta also are very large: but both their tissue and that of the heart appear healthy.

The patient was thirty years old. He had acute rheumatism fifteen years before death. He had dyspnoea on exertion during the last year of his life, and in the last week he suffered extremely from it; but he had no anasarea except in his last three days. Case-Book, Vol. i. p. 190, No. 210.

64. Part of an Aorta, with only two Valves, both of which, like those in the specimen last described, are made completely rigid, by the thickening and induration of their tissue, and by the abundant deposit of earthy matter. One of the masses of earthy matter is cut open: its interior is dark, soft, and broken down, looking like a cavity in a carious tooth. The aortic orifice is reduced to a narrow crescentic fissure between the two valves.

Presented by F. H. Colt, Esq.

65. A Heart, in which there are imbedded, in the middle of the posterior wall of the left ventricle, several small masses of a yellowish firm substance. Some of them are prominent in the cavity of the ventricle; but the largest, which is darker and firmer than the others, projects externally, and is situated at the bottom of a recess in the wall of the heart, like the sac of an aneurism. The muscular substance of the heart is wasted

around this largest mass, and a thin layer or capsule of fibro-cellular tissue invests it. The pericardium was adherent to its surface and to the adjacent part of the surface of the ventricle.

The patient was a girl, who, for a long time before her death, had complained of nearly constant pain about the heart, but presented no other sign of cardiac disease. She died suddenly.

Presented by Dr. Hue.

66. Part of an Aorta, of which the orifice is small, and the valves thickened, opaque, united at their adjacent edges, and all made nearly rigid by deposits of earthy matter in them and in parts of the arterial walls near their angles. Only a small aperture remains leading from the centre to the wall of the aorta, between the edges of two of the valves.

From an elderly gentleman who had cerebral disease, but manifested no distinct signs of disease of the heart.

67. Part of an Aorta, with only two valves, both of which are thickened, and made rigid by deposits of earthy matter, parts of which project in coarsely granular masses on the arterial surface of the valves. Only a very narrow linear fissure remains between the valves.
68. A Heart, greatly enlarged, and with only two pulmonary valves. Both these valves are slightly thickened and opaque, and have large masses of fibrine mixed with earthy matter attached to their free borders. One of these masses, three quarters of an inch in length, hangs into the cavity of the ventricle, and appears, by its weight, to have elongated and drawn out the narrow portion of the edge of the valve to which it is attached. All the other valves are slightly opaque, but thin and pliant. There is a small granular patch of fibrine deposited on the posterior surface of one portion of the mitral valve.
69. Part of the left side of a Heart, with lymph or fibrine deposited on a large portion of both surfaces of the mitral valve, and on the borders and ventricular surface of the aortic valves. The deposits are soft, yellowish, warty, and firmly attached. The valves are opaque and slightly thickened; those of the aorta are also contracted.

SERIES XIII.

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1. A THORACIC AORTA, exhibiting an abundant deposit of earthy matter in its coats. The earthy matter forms, in many places, thin, round, and oval plates, some of which lie uncovered on the inner surface of the artery, while beneath others, shallow cavities are shown filled with soft grumous yellowish substance.

2. An Aorta, with an Aneurism of the first portion of its arch, which has burst within the pericardium. The sac, which is of an oval form, has extended across the front of the aorta between it and the pulmonary artery, and has compressed the latter. The mouth of the sac is round and is situated in the front wall of the aorta, just above the aortic valves. A quill is introduced from the sac through the ruptured aperture, above which a portion of the pericardium is reflected from the sac. The internal coat of the aorta is thickened and tuberculated, especially near the margin of the mouth of the aneurismal sac. Lymph is deposited on the inner surface of the pulmonary artery, where it is pressed upon by the sac.

From a patient forty years old, who, while apparently in good health, died suddenly after a full meal. The pericardium was distended with coagulated blood, Case-Book, Vol. i. p. 16, No. 36.

3. Part of the Arch of an Aorta, in which there is an appearance as if a portion of the internal coat just above the valves were deficient. The middle and external coats are dilated in a corresponding extent of the walls.

From a man who died with diabetes. No. 5 in this Series contains one of his renal arteries.

4. A Popliteal Artery, in which the internal coat is thickened, wrinkled, and the seat of abundant earthy deposit. A portion of it, an inch in length, is obliterated.
5. Part of an Abdominal Aorta, with the right Renal Artery obliterated by deposits of earthy matter filling its cavity. The internal coat of the aorta is thickened.

From the same diabetic patient as No. 3 in this Series, and Nos. 16, 26 in Series XVI. The kidney to which this renal artery belonged was of full size, and its pelvis contained urine. Case-Book, Vol. i. p. 21, No. 45.

6. Part of the Aorta of a Dog, exhibiting the effects of a ligature applied twenty-four hours before death. The inner and middle coats of the artery are partially divided, and above the seat of the ligature is a conical coagulum, which appears laminated and is loosely attached to the walls of the artery.
7. Sections of an Aneurismal Sac, which was situated on the Abdominal Aorta, immediately below the superior mesenteric artery. The cœliac and superior mesenteric arteries are obliterated at their origins. The sac is completely filled by firm laminated coagulum. The coats of the aorta are thickened and opaque.

From a man forty-five years old, who died from rupture of the dilated aorta in No. 9. Case-Book, Vol. i. p. 14, No. 32.

8. The Arch and Thoracic portion of an Aorta uniformly dilated. The coats of the artery are generally thickened and indurated. Earthy matter is deposited in them, and their inner surface is irregularly tuberculated, and appears ulcerated at many points.
9. A Heart, with an Aneurism extending from the commencement to the termination of the arch of the aorta. The sac is of immense size; its lower part is formed by the dilated aorta; but at the upper part its walls are apparently formed by condensed cellular tissue, and exhibit small laminated deposits of fibrine upon their inner surface. The front and upper part of the sac has been turned upwards, with three ribs belonging to the right side of the chest, and a part of the sternum, closely

attached to it. There is a small fissure, in the side of the sac near its upper part, through which blood escaped into the pleura. The heart is healthy; but the pericardium is generally adherent to it.

From the same patient as No. 7.

10. The Arch of an Aorta, generally dilated and having a large aneurismal sac, formed by a further dilatation of a portion of its anterior wall. The sac extends forwards through the sternum and costal cartilages, and formed a considerable tumour on the front of the chest. There is an abundant deposit of earthy matter in the walls of the artery, and in part of the aneurismal sac.
11. Section of the Arch of an Aorta, with an Aneurism arising from its upper part. The cavity of the sac is nearly filled by laminated coagulum. The internal membrane of the artery is thickened. The trachea is attached to the sac, and its internal membrane is elevated by the pressure of the sac against it. The sac is also closely adherent to the arteria innominata, and to the right carotid and subclavian arteries.
12. Portion of the Aneurismal Sac last described, removed to show the concentric laminated arrangement of the coagulum contained in it.
13. Portions of the Femoral, Popliteal, Tibial, and Peroneal Arteries, the coats of which, by the abundant deposit of earthy matter in them, form rigid bone-like tubes. The greater part of the deposit is in the form of narrow rings round the artery.
14. The Arch of an Aorta, with a broad flat aneurism which, arising from its anterior wall just above the valves, has compressed, and burst into, the pulmonary artery. The internal coat of the aorta is irregularly thickened: the mouth of the sac is round and very wide.
15. The Arch of an Aorta, generally and almost uniformly dilated

into a large aneurismal sac. The dilatation begins directly above the valves, and terminates abruptly just beyond the origin of the left subclavian artery. The interior of the sac is very unevenly tuberculated: it contains no coagulum, and has burst into the pulmonary artery.

The patient was a man forty-five years old. While apparently in good health, he was seized with pain in the chest, dyspnoea, and intermittent pulse, and died in eighteen hours. Case-Book, Vol. i. p. 125, No. 148.

16. Section of the lower part of an Abdominal Aorta, with an Aneurism formed by the dilatation and growth of a small portion of its posterior wall. A piece of bongie is introduced into an aperture by which the sac burst. The coats of the aorta, except in the dilated part, appear quite healthy: the interior of the sac is coarsely tuberculated.

17. Parts of an Abdominal Aorta, and of the Vena Cava Inferior. Both vessels are imbedded in a mass of enlarged lymphatic glands. The coats of the aorta are thickened, and its cavity is contracted just above its division into the iliac arteries. The vena cava, to the extent of three inches above the iliac veins, is completely filled by concentric layers of fibrine which are adherent to its inner surface.

18. Part of the Arch of an Aorta, with its large vessels, exhibiting an Aneurism of the Arteria Innominata pressing upon the trachea. The sac appears to be formed by dilatation of the whole circumference of a part of the artery, and contains laminated coagulum, the deposit of which has extended across the orifice of the right carotid artery, so as completely to close it. The canal of the trachea is slightly narrowed by the pressure of the aneurism.

The patient was a girl twenty years old. For a fortnight before her death she was subject to paroxysms of dyspnoea, and in one of these she died. The case is related by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, Vol. vi. p. 227, London, 1815. Case-Book, Vol. i. p. 122, No. 145.

19. A Femoral Artery, and Vein, from a Stump. The coats of the vein are generally thickened and indurated. Lymph is deposited upon the whole of the inner surface of the vein, as high

up as the junction of the deep femoral vein ; and the lymph, mingled with clots of blood, completely fills the cavity of the vein to some distance above the amputated extremity. A conical clot an inch in length fills the end of the cavity of the artery.

The patient was a man forty-five years old. The amputation was performed for compound fracture. The cavity remaining within the lymph in the vein was full of pus. Case-Book, Vol. i. p. 15, No. 33.

20. The Arch of an Aorta, from which two large Aneurisms have arisen. The mouths of the sacs are separated by a portion of the whole circumference of the artery about half an inch in width, above which they communicate by an irregular oval aperture, through which one appears to have burst into the other. Laminated coagulum lines both sacs. The internal surface of the aorta is tuberculated, and has irregular deposits of soft matter between its coats.

Presented by James Gillman, Esq.

21. The Arch of an Aorta, with the left subclavian and axillary arteries. The left axillary artery is the seat of aneurism, for the cure of which the subclavian artery has been tied. The upper part of the preparation consists of the left subclavian artery and the arch of the aorta. By tracing the subclavian artery downwards, the situation where it has been tied will be recognized. On the side of the ligature nearest to the heart, the artery is pervious and of its ordinary size to its extremity, which was closed by only a small coagulum. Between this coagulum and the sides of the vessel, is an aperture into which a bristle is passed, and through which blood had passed from the artery to the outward wound. At a short distance above the situation of the ligature, several large branches arise. The portion of artery between the situation of the ligature and the aneurismal sac is completely closed by coagulum. The aneurismal sac also is in great part filled by laminated coagulum : its exterior is firmly attached to three of the ribs which have undergone partial absorption. Below the sac is the remaining part of the axillary, with the commencement of the brachial, artery. The axillary artery from the point of its connexion

with the sac is quite pervious, and a large branch arises from it which divides into the infra-scapular and circumflex arteries. The axillary vein is connected with the sac, and is pervious. The coats of the subclavian artery above the situation of the ligature were so brittle that they yielded to the slightest force.

The patient was a man thirty-eight years old. The aneurism appeared to have existed four months, and was first observed six months after an attack of acute rheumatism. He died after repeated hemorrhages, on the thirteenth day from the application of the ligature. The case is described by Mr. Charles Mayo, in the *Medico-Chirurgical Transactions*, Vol. xii. p. 12. London, 1823. Case-Book, Vol. i. p. 115, No. 141.

Presented by Charles Mayo, Esq.

22. Portion of a Femoral Artery, exhibiting the obliteration of its trunk and of the commencement of the Profunda, by the deposit of fibrine in concentric layers forming a firm clot about an inch in length. The arterial coats appear healthy.

From a young man who died with disease of the aortic valves. Some time before his death, the limb from which this artery was taken became, without any evident cause, pulseless and cold. Case-Book, Vol. i. p. 21, No. 46.

23. A Femoral Artery, upon which a ligature was placed a considerable time before death. The canal of the artery above and below the obliterated part is gradually contracted into a conical form as it approaches that part. The upper and lower portions of the vessel are connected by condensed cellular tissue. For some way above and below the obliterated part, the coats of the artery are thickened, and in the upper portion a dry clot of blood is firmly adherent to the walls.

24. A Popliteal Artery, with a diffused Aneurism. There appears to have been a complete rupture of the whole circumference of the artery, so that the sac is formed entirely by the surrounding cellular tissue. Above and below the aneurism, the artery appears to be healthy; its coats terminate abruptly at the boundaries of the sac. The sac is almost filled by laminated coagulum. The popliteal vein is pervious, but flattened by the pressure of the sac.

25. The Arch of an Aorta, with a small Aneurism arising from its

termination. The aneurism has protruded and burst into the left bronchus. The aorta is generally thickened and dilated.

26. Iliac and Femoral Arteries, with an Aneurism at the commencement of the Femoral Artery, for the cure of which the external Iliac has been tied. The sac is large, nearly globular, and in great part filled by laminated coagulum. Upon its lower part, a portion of skin is left, with the aperture through which it burst externally. The ligature was applied about an inch and a quarter above the sac, and it has completely divided the internal coats of the artery. Between the situation of the ligature and the sac there is a small deposit of lymph. Between the situation of the ligature and the division of the common iliac, the artery is completely filled by lymph and coagulated blood. The coats of the artery are, apparently, healthy. The femoral artery, as it passes out of the lower part of the sac, is impervious. The profunda passes out of the middle of the sac, and is pervious. The femoral vein is open above and below the sac, and is obliterated by the pressure of the sac in the mid-space. The anterior crural nerve is connected with the sac, and is flattened by its pressure.

The patient was a man seventy years old. The aneurism had existed two years and a half before it burst through the sloughing integuments. The artery was tied directly after the rupture, and the patient lived fifty-five hours. Case-Book, Vol. i. p. 16, No. 37.

27. Iliac and Femoral Arteries, with an Aneurism at the commencement of the Femoral Artery, for the cure of which the external Iliac has been tied. The ligature was applied about half an inch below the division of the common iliac. The upper end of the artery is closed by a small portion of dry clot; its lower end is closed by a conical clot an inch long and closely adherent to its walls. Between these clots is a substance connecting the extremities of the artery divided by the ligature, which substance appeared, in the recent state, to consist of the remains of the sheath of the artery. From the clot below the situation of the ligature, to within a short distance of the sac, the artery is pervious: and from this pervious part the epigastric and circumflex branches arise. Within that

part of the artery which is directly above the sac, is a small conical clot completely filling its canal. The coats of the artery appeared healthy throughout. The external iliac vein is pervious to within an inch of the sac; but there it is obliterated. The interior of the portion of sac which is preserved is irregularly wrinkled and tuberculated, but polished as if lined by a prolongation of the internal coat of the artery.

The patient was a man thirty-five years old. The aneurism extended from Poupart's ligament nearly to the knee, and almost surrounded the limb. After the ligature of the artery the limb mortified, and the patient died in the third week with symptoms of tetanus. The case is related by Mr. Hodgson in his "Treatise on Diseases of the Arteries and Veins," p. 198, Case xxxv. Case-Book, Vol. i. p. 14, No. 30.

28. The Arch of an Aorta, with the Arteria Innominata and Right Carotid Artery. There is an aneurism of the carotid artery, about half an inch below its division, for the cure of which a ligature was applied. A section of the aneurismal sac shows its cavity contracted and filled by layers of coagulum. A portion of straw is passed through the narrow opening of communication between the sac and the artery. The place where the artery was tied is marked by a portion of straw, which is introduced into the channel leading to the artery from which the ligature was withdrawn. Below the situation of the ligature, the artery is filled by a large clot of blood extending nearly to the division of the innominata. Above the situation of the ligature the coats of the artery are thickened, and lymph is deposited upon its internal surface; and these appearances extend upwards to the division of the carotid into the external and internal branches, both of which are pervious. The coats of the aorta are thickened and tuberculated.

The patient was a man fifty-two years old. The aneurism had been observed for a month, and appeared to be the consequence of an injury of the neck. He died in the fifth week after the operation, with suppuration in the artery above, and in the tissues round, the sac. The case is described by Mr. Vincent, in the *Medico-Chirurgical Transactions*, Vol. x. p. 212, London, 1819. Case-Book, Vol. i. p. 111, No. 139.

29. A Vena Cava Inferior obliterated. The preparation consists of the remains of the vena cava, the right kidney, and a firm fleshy tumour which has been formed between them. Great part of the kidney is absorbed. The vena cava is

obliterated from its bifurcation almost to its termination in the auricle. The upper part of the vein is distended by fibrinous substance, which appeared to have been separated from the blood. Below this the vein could not be traced; it appeared to be completely lost in the diseased structure.

30. Portion of an Abdominal Aorta. Earthy matter is deposited in its coats in such quantity that it forms a complete tube, which is in some parts half a line in thickness.

31. A Vena Cava Inferior, with the Common Iliac Veins, obliterated by deposits of fibrine in their cavities. From the contracted state of the iliac veins and of the lower part of the inferior cava, it was inferred that they had been obliterated for a considerable time.

The body from which they were taken was generally anasareous, and one foot had mortified. Case-Book, Vol. i. p. 25, No. 57.

32. Portion of an Artery, exhibiting the division of its middle and internal coats by three different kinds of ligature, viz. the large round, the small round, and the flat, ligature. The ligatures employed were composed of the same materials as those which are tied round the portion of artery by the side of that on which the experiment was made. The small round ligature, which is in the middle, made the cleanest and most complete division of the coats: the division by the flat ligature is uneven, incomplete, and attended by partial separation of the adjacent part of the divided coats.

The experiment was made on a dead artery.

33. Sections of an Abdominal Aorta, with a small Aneurism. The sac is situated between the coats of the artery; its cavity extending on every side of the small mouth by which it opens through the inner coat, and projecting very little externally. Its cavity is completely filled by laminated coagulum. Above and below the aneurism, earthy matter is deposited in the coats of the artery, and its walls are generally thickened and indurated.

34. A Femoral Vein, exhibiting an abundant and nearly uniform

deposit of lymph upon its inner surface. That part of the inner membrane of the vein which is exposed is of a dark red colour. The branches of the vein are filled by firm coagula.

These veins were taken from the left lower extremity of a man who had compound fracture of the right thigh. He died a month after the injury, with obscure signs of phlebitis. The remaining cavities of the veins were full of pus; but no other veins were diseased. Case-Book, Vol. i. p. 54, No. 95.

35. Parts of a Femoral Artery and Vein, from a Stump. The extremity of the artery is closed by a conical clot, which extends up the vessel to the origin of the nearest branch. The base of this clot is united to the extremity of the artery. The extremity of the vein is closed by a similar but smaller clot. The coats of the artery and vein are thickened and closely united to the surrounding parts.
36. Parts of a Femoral Artery and Vein, from a Stump. The extremity of the artery is closed by the adhesion of its sides, but there is no clot within it. The extremity of the vein is open, and lymph is deposited upon its internal surface.
37. Parts of a Femoral Artery and Vein, from a Stump. The extremity of the artery is open; but its canal is filled to some distance by a coagulum, which adhered firmly to its coats. The extremity of the vein is closed, and there is a deposit of lymph upon its inner surface.
38. Parts of a Femoral Artery and Vein, from a Stump. The extremities of both the artery and the vein are closed, and intimately connected with the surrounding tissues. Both of them also have coagula above their closed extremities.
39. Part of an Aorta, with an Aneurism at the commencement of the Arch. The sac has extended forwards through the sternum and ribs on each side, and, elevating the pectoral muscles, has formed a large tumour upon the chest. A portion of skin attached to the front of the tumour indicates, by its white appearance, that the process of sloughing had commenced in its centre. The sac, in its progress towards the sternum, has

extended itself on each side into the lung. A portion of the sac in the right lung is laid open, and is filled by laminated coagulum. On the left side, the ragged surfaces of the sac, and the shreds of coagulum protruding through it, mark the situation in which the aneurism burst into the chest.

40. A Femoral Artery, from a Stump. Its coats are thickened, and earthy matter is abundantly deposited in them. In consequence of the occurrence of hemorrhage after the amputation, a second ligature was placed around the artery, about two inches above its extremity. This ligature had separated before death; and a portion of whalebone is passed into the aperture through which it was withdrawn. The cavity of the artery, above and below the situation of this ligature, is filled by lymph and clots of blood, which extend to a considerable distance up the vessel. The cut end of the artery is open.
41. The Arch of an Aorta, which is the seat of an Aneurism, by the progress of which the left Subclavian Artery is obliterated. The walls of the sac appear to be formed entirely by the thickened and dilated coats of the artery. At the back of the preparation is the arteria innominata, with the left carotid artery; in the front and lower part is the left subclavian artery, obliterated at its origin by fibrine extending from that which lines a part of the aneurismal sac. There is a wide irregular aperture produced by the rupture of the end of the sac.
42. The commencement of the Aorta, with two small Aneurismal Sacs, just above and behind two of the semilunar valves. The coats of the artery are thickened, and its internal surface is tuberculated. One of the sacs is nearly filled by laminated coagulum.
43. A Carotid Artery, with a large Aneurism at its division. The sac is globular and completely filled by layers of coagulum loosely connected. A portion of straw is passed through the narrow opening of communication between the sac and the

artery. Around the opening the coats of the artery are thickened and rough; below it they appear quite healthy, but the canal of the artery is diminished by the pressure of the aneurism. The external and internal carotid arteries are pervious. The pneumogastric nerve is exposed above and below the aneurism; in the intermediate space it could not be traced on the sac.

44. Portion of a Carotid Artery, with its external and internal branches. Just above the division, the cavity of the internal carotid is slightly dilated, and its internal coat is thickened, opaque, white on its surface, and the seat of an abundant deposit of soft, probably fatty, matter in the deeper part of its thickened substance.
45. Portion of an Abdominal Aorta, in the coats of which there is abundant deposit of fatty and earthy matter, with ulceration over the principal deposits. Between the renal and inferior mesenteric arteries the ulceration has extended through the inner and middle coats of the aorta to its outer coat, which is dilated into a small pouch.
46. Part of a Splenic Artery, with a small Aneurism formed by the dilatation of a portion of its wall. Earthy matter is deposited in the coats of the sac.
47. A Popliteal Artery, of which the whole circumference, in about an inch and a half of its length, is dilated into an aneurismal sac. The coats of the artery, both above and below, as well as at the seat of, the aneurismal dilatation, are thickened.
48. Part of an Abdominal Aorta, with a large Aneurism, which has extended from its posterior wall backwards through the vertebræ and ribs, and forms a large sac external to the chest by the side of the spine.
49. An Anterior Tibial Artery, in which a small lacerated aperture,

completely penetrating its coats, was made by the sharp end of a fragment of bone in a case of compound fracture.

Amputation was made necessary by the hemorrhage. Case-Book, Vol. i. p. 19, No. 40.

50. Portion of a Renal Artery, with a small Aneurism. Earthy matter is deposited in the coats of the sac, and the adjacent walls of the artery appear thickened and indurated.
51. Part of the Arch of an Aorta, with an Aneurism immediately above one of the semilunar valves. The sac, which is about the size of a walnut, extended between the pulmonary artery and the aorta, and burst into the pericardium, through the opening into which a quill is introduced. The internal coat of the aorta at the angles of the other valves, as well as around the mouth of the sac, is thickened, opaque white, elevated, and tuberculated.
52. The Arch of an Aorta, with an Aneurism at its upper and posterior part, between the innominate and left carotid arteries. The sac is in great part filled by coagulum. The internal coat of the artery is generally thickened. The sac has compressed and burst into the trachea by a transverse rent between two of the cartilaginous rings.
53. A Popliteal Artery, with part of a large Aneurismal Sac. The upper portion of the popliteal artery is pervious to its termination in the sac, into which it opens by a smooth round orifice. The lower portion of the artery is also pervious, and communicates with the sac by an opening of considerable length. The upper portion of the popliteal vein is obliterated; the lower portion is pervious.
54. The Arch of an Aorta, with a large Aneurism just below the innominate, which has burst into the trachea and œsophagus. The sac is nearly filled by layers of coagulum; and the blood passed between them and the parietes of the sac, in the direction marked by two pieces of whalebone, to the irregular apertures in the trachea and œsophagus by which

the aneurism burst. All the arteries arising from the upper part of the arch of the aorta are compressed by the aneurism.

55. The Arch of an Aorta, from which an Aneurism of the posterior wall below the brachio-cephalic trunks has burst into the œsophagus. The internal coat of the artery is much thickened. The main arterial trunks arise from the front of the sac, and are not compressed.

56. An External Iliac Artery, torn completely and straight across. The torn ends of the artery are an inch apart, and are connected by a coagulum of blood. The coats of the artery are not obviously diseased.

The rupture was directly under Poupart's ligament. It occurred in an injury by which the lower part of the femur was fractured.

57. A Subclavian and Axillary Artery. The coats of the Artery, especially the inner coat, are thickened; and its cavity is generally dilated.

58. Part of an Aorta, with a large Aneurism of the Thoracic portion. The sac has extended into the bodies of the vertebræ, and has burst by a large sloughing aperture into the œsophagus. The coats of the artery are greatly thickened and generally dilated, and its inner coat is tuberculated with opaque, white, elevated patches.

59. A Femoral Artery and Vein, from a Stump. The coats of the artery are generally thickened. No adhesion of its sides has taken place at the cut extremity; but for some distance higher up, its cavity is filled by coagulum. The extremity of the vein is closed.

60. The Arch of an Aorta, exhibiting numerous deposits of soft and earthy matter in its coats, and a mass of fibrine, about the size of half a walnut, so closely adherent to the inner surface of the artery as to present the appearance of a growth from it. No other fibrine was deposited in the artery.

From a man thirty-eight years old, who died with phthisis. Case-Book, Vol. i. p. 173, No. 197.

61. A Femoral Artery and Vein, which were exposed and partly destroyed in the progress of a phagedænic ulcer. The coats of the artery, to the extent of about an inch, are completely disorganised; and two small ragged openings are visible in this portion of the vessel. Above this part of the artery, a circular indentation in its walls may be perceived, which was occasioned by a ligature placed around it in consequence of hemorrhage from the openings just mentioned. A portion of the vein is obliterated, and its cavity below the obliterated part is filled by a clot of blood.

The disease extended from the labia of a woman, and had destroyed a large portion of the perineum before it reached the groin.

62. The Arch of an Aorta, with the large Arteries proceeding from it, and an Aneurism of the right Carotid Artery. The aneurism involves a portion of the common carotid, with the commencement of the external and internal carotid arteries. The sac is filled by firm coagula. About an inch below the sac, a ligature was placed around the artery, and was not separated at the time of death. Between the ligature and the aneurism, as well as between the ligature and the origin of the subclavian artery, the whole cavity of the carotid is filled by coagulum which adheres firmly to its sides. The aorta presents a tuberculated appearance upon its internal surface from the thickening of its inner coat and the deposit of soft matter in it. Portions of the pneumogastric and sympathetic nerves are firmly united to the aneurismal sac. The external and internal carotid arteries are closed at the point of their communication with the aneurism, but appear of healthy texture.

63. A Subclavian and Axillary Artery, the seat of Aneurism. The aneurism includes nearly three inches of the artery, and appears to be formed by dilatation of its whole circumference. The axillary plexus of nerves is connected with one side of the sac: and portions of the first and second ribs form part of its boundaries. Only half an inch of the artery intervenes between the aneurism and the cluster of branches arising from the first portion of the subclavian. For a short distance both above and below the aneurism, the coats of the artery are thickened, and

soft, probably fatty, matter, is deposited in them ; but beyond these portions the arterial walls appear healthy.

64. A Femoral Artery, the inner and middle coats of which were lacerated in a case of compound fracture. The laceration extends transversely round two thirds of the artery just above the origin of the profunda. The lower extremity of the artery is closed by a ligature which was placed round it a short time before death, when the limb was amputated for the other injuries sustained in the compound fracture.
65. A Posterior Tibial Artery and Vein, which were wounded a few days before death. The wound is transverse, and extends through only one side of each vessel. The clot of blood seen in the preparation was found adhering to both vessels: the regularly circumscribed cavity in it was exactly over the division of their coats.
66. A Femoral Artery, the coats of which have abundant earthy deposits in them, and show the effects of a ligature placed round it a few days before death. The ligature was applied at a little distance from the extremity of the artery, and it has divided the inner and middle coats. For two inches above the ligature the artery is filled by coagulum.
67. A Subclavian and Axillary Artery, with part of a very large Aneurismal Sac. The aneurism occupies a part of the subclavian and the whole length of the axillary artery to the commencement of the brachial; but only a small portion of the sac is preserved connecting the two parts of the artery. Bristles are passed into the apertures of communication between the artery and the sac; both of which apertures are small, and smooth. The interior of the sac is tuberculated and wrinkled, but polished as if lined by a continuation of the internal coat of the artery: the axillary nerves are connected with its exterior. The artery is neither changed in structure nor dilated on either side of the aneurism.
68. The Abdominal Portion of the Aorta, with an Aneurism formed

by dilatation of the greater part of its circumference, and extending from the superior mesenteric to the iliac arteries. The walls of the sac and of the adjacent portions of the artery are thick and tuberculated; there is a small round aperture, through which the front of the aneurism burst into the duodenum by a regular smooth-edged opening. The superior and inferior mesenteric arteries are obliterated at their origins.

The aneurism had probably existed more than two years. The rupture occurred four days before death. Case-Book, Vol. i. p. 30, No. 67.

Presented by John Thorn, Esq.

69. The Arch of an Aorta, with an Aneurism of its upper part and right side involving the arteria innominata. Very firm and thick laminated coagulum lines the sac, and has closed the origin of the right subclavian artery. A portion of the coagulum was found detached, and almost loose in the cavity of the aorta, as it now appears in the preparation. The trachea is slightly compressed by the sac.

The patient, an elderly man, was supposed to have chronic asthma, the signs of which increased to such a degree that the trachea was opened to prevent the suffocation which seemed impending. A large thyroid vein was opened in the operation, and the patient died. Case-Book, Vol. i. p. 39, No. 76.

70. The Arch of an Aorta, with an Aneurism at its upper part. Part of the sac is formed by the dilated artery, the coats of which terminate with an abrupt margin near the middle of the sac. The remaining part of the sac is formed by condensed cellular tissue, and the sternum. Round, deeply impressed, pits produced by absorption are visible upon the internal surface of the sternum: and one of these penetrates the bone to its external surface, and leads to an ulcerated aperture in the corresponding portions of the integuments.

71. Portion of a Vena Cava Inferior, in which there is a transverse lacerated aperture, about two inches above the iliac veins.

From the same person as the ruptured bladder, Series XXIX. No. 21, and the ruptured intestine, Series XVI. No. 51.

72. An Aorta, exhibiting extensive and large circular ulcerations of its inner coat, with deposits of soft and earthy substance in its thickened tissue, and between it and the middle coat.

73. Portion of an Abdominal Aorta, with large nodulated and granular masses of earthy matter attached to its internal surface. Around these deposits the inner membrane is thickened and opaque, and the bases of some of them are fixed on thin circular plates of earthy matter.

Presented by William Gillard, Esq.

74. Portion of an Abdominal Aorta, dilated and exhibiting deposits of large masses of earthy matter on its internal surface.
75. The Arch of an Aorta, with the Subclavian and Carotid Arteries. The right subclavian artery exhibits the remains of an aneurism which has been spontaneously cured. The aneurism appears to have been formed by dilatation of the whole circumference of a portion of the artery about two inches long. On each side of the aneurism the artery is contracted and completely closed: above the aneurism its walls appear to have coalesced; below the aneurism its cavity is filled by lymph to the extent of nearly an inch. The inner coat of the aorta and its branches is thickened; and there are deposits of soft substance beneath it.
76. A Foot, exhibiting enlargement and tortuosity of the tarsal and metatarsal branches of the anterior tibial artery, in consequence of obliteration of its trunk near the ankle-joint.
77. Portion of a Vena Saphena and its branches in a varicose state. The veins are generally and uniformly dilated; their coats are thickened and rigid, so that their canal remains open; and they have a convoluted and very tortuous course.
78. Portion of a Femoral Vein, exhibiting a partial dilatation of its coats in the form of a circumscribed pouch, projecting from one side. The pouch is lined by a continuation of the internal coat of the vein. Immediately above the pouch there are two valves in the vein, which have undergone no change. The coats of the vein are generally thickened.
79. Portion of a Vena Saphena, the walls of which are in several

places dilated in the form of pouches. Its coats are thickened, and there are thin chords, apparently the remains of its valves, extending across its cavity.

80. A Femoral Artery, the coats of which are made completely rigid by deposits of earthy substance. The deposits form a nearly uniform tube, in which, however, traces of an annular arrangement may be observed.
81. Portion of an Abdominal Aorta, exhibiting a large Aneurismal Sac, with a wide oval mouth, projecting from one side of the artery, and formed entirely by the dilatation of its coats. A soft white substance is deposited in irregular patches beneath the inner membrane of both the sac and the arterial walls.
82. A left Carotid Artery, with a portion of the Arch of the Aorta. A ligature was placed around the carotid artery, in the middle of its course, six weeks before death, and it had been separated without hemorrhage. A firm cylindrical clot adheres to the inside of the artery, and extends from half an inch below the situation of the ligature downwards to the aorta. A similar clot is continued upwards within the artery, from the situation of the ligature to the origin of a small branch. The extremities of the divided artery from which the ligature separated are soft and pulpy, and there was not in either of them the least adhesion of the opposite sides of the vessel.

The artery was tied in the hope of curing epilepsy in an elderly gentleman, who had found that by compressing his carotids he could avert the epileptic seizure. He died with abscess extending into the mediastinum along the sheath of the carotid and jugular vessels.

83. A Femoral Artery, the seat of Aneurism. The sac, occupying the whole inguinal portion of the artery, extends from the origin of the epigastric and circumflex iliac branches to the profunda. It is formed by a dilatation of about half the circumference of a portion of the artery an inch long. The coats of the artery, thickened by deposits of soft substance, opaque, and indurated, may be traced for some way upon the inside of the sac. In the rest of its extent the sac appears to be formed by

condensed cellular tissue ; and its surface, at its upper part, is covered by thick laminated coagulum. Bristles are introduced into the orifices of the epigastric and circumflex iliac arteries. In the lower part of the sac are two distinct orifices, one leading to the femoral artery, the other to the profunda. The femoral vein, to the extent of two inches, is obliterated by the pressure of the aneurism. Below the obliterated part the vein is laid open to show the clots of fibrine filling its cavity.

84. The Arch of an Aorta, exhibiting an aneurism which has burst into the vena cava superior. The aneurism is formed by dilatation of the upper and posterior wall of that portion of the arch which lies between the reflection of the pericardium and the origin of the arteria innominata ; its walls comprise all the coats of the artery. On both sides of the aneurismal sac the aorta has its natural size, and its internal coat appears less thickened and tuberculated than where it lines the sac. The vena cava superior is adherent to the exterior of the sac, and there is an aperture of communication between them ; immediately around which aperture the vein and the sides of the sac are so much attenuated as to be transparent.
85. The Arch of an Aorta, with the Carotid and Subclavian Arteries, all generally and almost uniformly dilated, and having earthy and soft matter deposited in their coats.
86. Portion of an Aorta, with the External Iliac, Femoral, and Popliteal Artery. There was an aneurism of the popliteal artery, on account of which the femoral was tied three weeks before death. The popliteal artery is not dilated, but it presents a large aperture in its coats, apparently the result of ulceration in the situation over which the aneurism was seated. A ligature was placed around the femoral artery, an inch and a half below the origin of the profunda, and had separated before death. A firm cylindrical coagulum fills the artery between the situation of the ligature and the orifice of the profunda. The divided ends of the artery are united by dense cellular tissue, but are not closed. Between the ligature and the aperture in the popliteal artery, there are several small deposits of soft

yellow substance in the coats of the artery; these increase in the lower part of the artery; the whole of its internal coat also is transversely wrinkled.

Presented by J. G. Perry, Esq.

87. The Arch of an Aorta, with the Pulmonary Artery. The aorta is considerably and uniformly dilated in the whole extent of the arch. Its coats are thickened and tuberculated; and, just above one of the semilunar valves, there is a small opening which extends through the coats of the aorta into the contiguous portion of the pulmonary artery. There is no greater dilatation of the aorta in the situation of this opening than in any other part.

88. Portion of a Brachial Artery, which was torn straight across by external violence.

The patient, a gentleman sixty-nine years old, fell with his arm stretched out. At first he seemed little injured; but pulsation was lost in the radial and ulnar arteries. In a few hours the arm became enormously swollen and livid, and amputation near the shoulder was performed. The brachial artery sloughed after being tied at the amputation. Case-Book, Vol. i. p. 42, No. 81.

Presented by Dr. James Billett.

89. Femoral, Popliteal, and Tibial Arteries, exhibiting abundant deposits of earthy matter in their coats. In some situations, especially in the posterior tibial artery, the earthy matter occupies the whole circumference of the vessel. Its general arrangement is in narrow rings.

From an aged man, in whom gangrene of the toes occurred spontaneously a short time before death.

90. A Heart, with the large Vessels attached to it, exhibiting an Aneurism of the Pulmonary Artery with a diseased state of its coats. Beneath the lining membrane of the artery there is a deposit of a white and soft substance, giving to the internal surface of the vessel a tuberculated appearance, which is especially marked in the right branch of the artery. The trunk of the pulmonary artery, from the valves to the bifurcation, is uniformly dilated; but its coats appear nearly healthy. Both the right and left pulmonary arteries are dilated; and in

one of the divisions of the left artery, which is more dilated than the rest, there is a deposit of firm fibrine, nearly filling the cavity of the dilated part. One of the divisions of the right pulmonary artery was in a similar state. The cavity of the right ventricle is dilated, and its walls are thickened. Beneath the lining of the aorta is a deposit of the same kind as that in the pulmonary artery, but less abundant.

The patient was a woman fifty-three years old. She had emphysema of the lungs, and chronic bronchitis, the signs of which concealed in great measure those of the disease of the pulmonary artery. Case-Book, Vol. i. p. 82, No. 119.

91. An External Iliac, Femoral, and Popliteal Artery, with the Femoral and Popliteal Vein, exhibiting a spontaneous Varicose Aneurism of the Femoral Artery and Vein, and part of an Aneurism of the posterior tibial artery. The upper piece of glass in the lower aneurismal sac is passed through the posterior tibial artery. The two lower pieces of glass are passed through the posterior tibial and peroneal arteries, both of which are continued from the lower part of the aneurism. The aneurism of the femoral artery is situated just before its passage through the tendon of the triceps femoris muscle: it is a small globular sac, formed by dilatation of the whole circumference of the artery. Earthy matter is deposited in the parietes of this aneurism, and it communicates directly with the femoral vein. The interior of the vein presents a rounded opening, with thin and smooth edges, about a quarter of an inch in diameter. Around this opening the vein is closely united to the aneurism, and immediately below it, the cavity of the vein is obliterated to the extent of half an inch. A ligature had been placed around the femoral artery about a week before death. Immediately above the ligature is a large irregular opening in the artery, from which fatal hemorrhage took place. Around this opening, and both above and below the ligature, the whole length of the artery is uniformly dilated to the size of an abdominal aorta, and its coats are very thin.

The patient was a man forty-seven years old. The aneurism of the posterior tibial artery had probably existed more than four years, that of the femoral artery about two years. The most striking sign of the disease was a peculiar purring thrill which was felt along the whole course of the femoral artery, both

during its pulsations and in the intervals between them, but which could be stopped by pressure on the varicose aneurism. Long-continued pressure on this part produced, it was believed, the obliteration of the vein about six months before the patient's death. The ligature was applied to the femoral artery shortly after a sudden increase had taken place in the aneurism of the posterior tibial artery. The patient died with hemorrhage on the sixth day after the operation. The case is described by Mr. Perry, in the *Medico-Chirurgical Transactions*, Vol. xx. p. 32, London, 1837. Case-Book, Vol. i. p. 64, No. 110.

Presented by J. G. Perry, Esq.

92. Femoral, Tibial, and Peroneal Arteries, in the coats of which there is an abundant deposit of earthy matter, like that in No. 89.

From an aged man, in whom mortification of the toes spontaneously occurred.

93. A long and slender branching piece of Bone, from the liver of a Sheep. It was probably formed in obliterated branches of the portal vein.

94. The Abdominal portion of an Aorta, with the Iliac Arteries, from an aged man. There is abundant deposit of both soft substance and earthy matter in the coats of all the arteries; and in the inner coat there are large irregular patches of ulceration. The aorta exhibits a partial dilatation just above the bifurcation. The common iliac and the internal iliac arteries, in addition to the above described alterations in their coats, are dilated into distinct pouches.

95. Femoral Vein from a Stump, amputation of the leg having been performed about three weeks before death. The vein is dilated, thickened, and indurated, and there is a deposit of lymph upon its inner surface. Only one pair of valves remain in the whole extent of the vein from Poupart's ligament downwards; the others, it is presumed, disappeared in the course of previous disease of the vein. The superficial veins in the leg were extensively varicose.

In the amputation, on account of the hemorrhage from the vein, its extremity was tied.

96. Portion of the Spermatic Vein, from a woman in whom there was extensive medullary disease of the uterus and adjacent parts. The vein is dilated and filled by fibrinous coagulum deposited in concentric layers.

97. Portions of a Femoral Artery and Vein. The cavity of the vein is completely filled with dry, grumous, decolorized clots of blood and lymph, inseparably adherent to its coats. Its coats are thickened and indurated. The artery appears healthy.

The patient was a young man who died with disease of the spine and phthisis. About six weeks before his death, œdema of the left lower extremities, with other signs of obliteration of the femoral vein, ensued.

98. A Splenic Artery, exhibiting a deposit of earthy matter between its coats, and a small aneurismal pouch formed by dilatation of about half its circumference.

99. Arteries of a Leg, with portions of the surrounding Muscles, from a man in whom the peroneal artery was penetrated by a knife which passed transversely into the back of the leg from the inner side. The track of the wound into the peroneal artery is shown by the piece of coloured glass. The peroneal artery is unusually large; the posterior tibial, into which a bristle has been introduced, is very small. The ligature was placed around the posterior tibial in the operation of searching for the wounded peroneal artery.

The patient died with delirium tremens a week after the ligature of the posterior tibial. The direction of the wound led to the supposition that the posterior tibial artery was wounded; but the knife had passed in front of it and had not injured it. *Casc-Book*, Vol. i. p. 139, No. 163.

100. A Pulmonary Artery, with a portion of the Lung. The right branch of the pulmonary artery is completely filled by a firm coagulum of fibrine, closely adherent to its internal surface. The smaller branches are also filled by similar coagula. The portion of the coagulum in the lower part of the bottle accidentally separated in the examination of the body.

The patient, a middle-aged lady, died suddenly during apparent convalescence after the removal of a large medullary tumour of the breast, preserved in Series XXXV. The case is related by Mr. Paget in the *Medico-Chirurgical Transactions*, Vol. xxvii. p. 166, London, 1844.

101. A Femoral Artery and Vein, from a man in whom, in advanced life, gangrene of the leg spontaneously arose several months before death, and extended high up the leg. The femoral artery, in its whole extent, is made rigid by the deposit of

earthy matter in its coats, and its cavity is filled by a firm, solid, and partially laminated coagulum. The coats of the femoral vein are thickened ; portions of it are filled by firm coagulum.

102. The Arch of an Aorta, with its great branches and the pulmonary Artery. The whole of the arch is somewhat dilated, and soft matter is deposited in its coats. A small hemispherical aneurismal pouch extends from the aorta just above the right semilunar valve, compresses the pulmonary artery, and communicates with it by an opening, through which a portion of glass is passed. Immediately around this opening the coats of the pulmonary artery are thickened.

103. The Base of a Heart, with the large vessels, the Trachea, and the Bronchial Glands. The whole of the bronchial glands are converted into one large mass of cancer, of very firm consistence, and a pale pinkish white colour, irregularly mixed with the ordinary black matter of the bronchial glands. Both the main bronchial tubes pass through this mass ; and they are much compressed. It surrounds and compresses the pulmonary arteries and veins, and the vena cava superior. The arteria innominata and both the venæ innominatæ are also pressed upon by the upper part of the diseased mass. The vena cava superior is so much compressed that its canal would scarcely admit more than the bristle which is passed through it. At the junction of the venæ innominatæ, the cancerous structure appears to have made its way into the cavity of the vein. Near the junction of the right subclavian and internal jugular veins, beneath the valve, there is a small growth from the interior of the vein, the structure of which appears to resemble that of the large tumour.

The patient was a man thirty years old. The disease was of about six months standing. Its progress was attended by great dyspnœa, and by enlargement of the cutaneous veins of the face, neck, and trunk, especially of those on the right side of the neck and chest. The venous current in them all ran downwards. Case-Book, Vol. i. p. 166, No. 190.

104. Portions of a Popliteal Artery and Vein. The artery was completely torn across by a wheel passing over the limb,

and its divided extremities are separated to a distance of nearly half an inch. They are widely open. In the upper part of the artery a coagulum is formed, which almost fills its cavity: in the lower part there are only some irregularly shaped portions of fibrine.

105. Right External Iliac and Femoral Vein. The coats of the vein are much thickened, and are consolidated with the surrounding tissues. Its interior is rough with lymph deposited on its lining membrane. The lower and upper parts of the vein, and all the branches proceeding from it, are filled by firm coagula composed of concentric layers of fibrine. The middle portion of the vein contained only soft fibrine and a fluid resembling pus.

From a young man, who died after amputation of the right arm, which was performed in consequence of traumatic gangrene.

106. The Base of a Heart, with the large vessels. Two small aneurisms have formed upon the first portion of the arch of the aorta and project into the pericardium, one above, and the other by the right side, of the trunk of the pulmonary artery. Portions of coloured glass are passed from the aorta into both the aneurismal sacs. The lower and larger of them, which opens into the aorta about half an inch above the valves, has been laid open: it is nearly filled by dark laminated fibrinous coagula. The smaller sac is nearly empty. The lining membrane of all the first portion of the aorta, is thickened, uneven, and opaque white: small quantities of fatty matter are deposited in and beneath it. The aortic valves are thickened, opaque, rigid, and reduced in breadth.

107. External Pudic Veins from a Horse. The coats of the veins are sound. Within the cavity of one of them there are firm coagula of blood attached to the inner surface of the vein, by solid round cords, behind some of which bristles are passed. One of these cords extends between two of the coagula, without having any attachment to the inside of the vein.

108. Two Coagula of Blood, which were found attached to the

inside of one of the veins described in No. 107. The section of one coagulum shows that it consists of regularly arranged layers of fibrine. The other coagulum is enclosed in three distinct cysts; of which the outer two are membranous, and the inner consists chiefly of bone.

109. Portion of an Aorta, with the Cœliac and Mesenteric Arteries, from a Horse. The cœliac artery is obliterated at its origin; it then becomes dilated into a wide pouch filled by layers of firm fibrine, in which there were several worms. (*Strongylus armatus*). These worms exhibited lively movements for a considerable period after their removal from the body. Some of them lie loose at the bottom of the bottle.

110. Part of a Heart, with the Aorta. A transverse rent extends through the inner and middle coats of the whole circumference of the aorta, about half an inch above the angles of the valves. The blood, penetrating between the coats at the torn part, has thence extended and separated the layers of the middle coat through a large portion of the arch and thoracic part of the aorta. Where the coats are thus separated, the trunks of the intercostal arteries are torn across close to their origins. The inner coat of the artery appeared opaque, and, in the thoracic portion, it is tuberculated by deposits of soft matter beneath its surface. The aortic and mitral valves are slightly opaque. The left ventricle of the heart is dilated and hypertrophied.

The patient was a woman about forty-five years old. Her pulse was generally strong and full, but she was considered perfectly healthy. As she was carrying two pails of water, she suddenly fell down, and almost instantly expired. Two pints of blood were found in the pericardium, which had probably escaped through some aperture in the external coat of the aorta, not shown in the preparation. Case-Book, Vol. i. p. 57, No. 100.

Presented by H. Page, Esq.

111. The Base of a Heart, with the Arch and Thoracic portions of the Aorta. About half an inch above the valves, there is an oblique rent about an inch long, extending through the inner and part of the middle coat of the aorta. The margins of the rent are soft and ragged. The blood passing through it has extended between the layers of the middle coat of the artery, through

the whole length and the greater portion of the circumference of the aorta, separating them and tearing across the intercostal and other small arteries. Some of the blood, coagulated, remains in the channel which it had formed for itself between the coats of the artery. The inner and middle coats of the aorta were soft, succulent, and very easily torn in any direction; its internal surface also appears shreddy by the partial detachment of little portions of the inner coat. The aortic valves are healthy: but the heart was generally enlarged.

The patient was a gentleman forty-five years old, who was subject to occasional attacks of rheumatism. While suffering with colic he was seized with syncope, which was shortly followed by signs of internal hemorrhage; and he died on the fourth day. The pulmonary artery was found to be compressed by the blood effused in the coats of the aorta. There was abundant soft deposit in the coats of the coronary arteries and the pericardium was full of blood.

Presented by Dr. Theophilus Thompson.

112. The Abdominal Aorta of the same patient, showing the further separation of its coats by the diffused blood. The separation extends to the origin of the renal arteries. The inner coat of the artery is more thickened than in the preceding specimen.

113. Parts of a Heart and Aorta, exhibiting a transverse rent extending round the whole circumference of the inner and middle coats of the aorta, about half an inch above the valves. The characters of this specimen closely resemble those of No. 110. The torn coats are soft, but in other respects they appear healthy.

The patient was a man about twenty-five years old. He had delicate health; but was not supposed to have any disease of the heart. He was suddenly seized, while walking, with pain in the chest and faintness, and quickly died.

Presented by Dr. Jeaffresou.

114. A Femoral Artery, with a Popliteal Aneurism. The artery was tied by the edge of the sartorius muscle eighteen months before death, and the aneurism was diminishing at the time of the patient's death. The femoral artery is completely obliterated, from the situation at which the ligature was applied to the origin of the profunda. An inch and a half of the length of this part of the artery is replaced by a solid round cord of

tough fibro-cellular tissue. Between the cord and the origin of the profunda is a firm, dry, rust-coloured clot of blood, filling and adhering to the coats of the artery. Below the cord is a similar clot half an inch in length, the lower end of which is continued into a milk-white thin layer, like the buffy coat of a clot of blood, which lines the whole length of the rest of the artery down to the aneurismal sac, and is, in its course, connected with three other decolorized clots closely attached to the arterial walls. Part of this layer has been reflected: the rest was too intimately adherent to the artery to be separated without tearing it: the coats of the part of the artery which it lines appear healthy. The mouth of the aneurismal sac is very long and narrow; both it and the whole cavity of the sac are filled by firm, dry, laminated coagulum. The walls of the sac are thick and tuberculated: they appear to have been formed by dilatation of about one-third of the circumference of a portion of the artery an inch and a half in length.

The patient was a man between fifty and sixty years old. He died with aneurism of the arch of the aorta, and abscess of the lung.

115. The Arch of an Aorta, with portions of the trachea and œsophagus. The coats of the aorta are thickened and tuberculated; and there are abundant deposits of fatty matter in them. It is generally dilated, and portions of it are further dilated into two aneurismal sacs. One of these is of large size and situated below, and in front of, the great branches of the arch. The other sac is at the extremity of the arch, on its convex side, just beyond the origin of the left subclavian artery. The last-mentioned sac is of small size, and projects backwards against the sides of the trachea and œsophagus. Its cavity is filled by laminated coagulum, a large portion of which also projects into the canal of the aorta. The posterior part of the sac, which was in contact with the trachea and œsophagus, has been separated from those parts and removed. The exterior of the œsophagus is healthy; but, internally, it is extensively ulcerated where it was compressed, and the ulceration has exposed the rings of the trachea, so that the ends of some of them project into the cavity of the œsophagus.

116. A Common Carotid Artery, into which the smaller end of a tobacco-pipe was driven a few days before death. At the upper part of the preparation is shown a portion of a sloughing cavity, in which the wounded part of the artery is involved and from which the external and internal carotid arteries proceed. Below this part, the canal of the artery is filled by a large dry clot extending from the wound to a ligature placed around the trunk of the common carotid. Below the ligature a similar clot fills the trunk to within half an inch of the division of the *arteria innominata*.

The patient was a young man. The tobacco pipe was accidentally driven through the tonsil into the artery at the angle of its bifurcation. He supposed that he had completely withdrawn it; but a portion of the pipe, an inch long, remained in the wound, closing the orifice which it had made in the artery, and preventing hemorrhage. Extensive suppuration followed, in the course of which hemorrhage ensued. The trunk of the artery was tied seven days after the accident; but hemorrhage recurred twice, and the patient died four days and a half after the application of the ligature. The case is related by Mr. Vincent, in the *Medico-Chirurgical Transactions*, Vol. xxix. London, 1846.

117. A Femoral Vein, in which, within the length of six inches, there are seven distinct lacerations through its coats.

The injury was produced by a cart-wheel passing over the thigh. The femur was not fractured, and there were but slight appearances of external injury. The patient, a middle-aged man, died with other injury received at the same time.

SUB-SERIES F.

INJURIES AND DISEASES OF ARTERIES AND VEINS.

The Specimens not contained in Bottles.

- F. 1. A THORAX, with the principal Arteries injected, from a man in whom the left subclavian artery was tied on the first rib, six years before death. The portion of the artery between

the situation of the ligature and the axilla is in Series VIII. No. 4. The circulation was maintained chiefly through the enlargement of the supra-scapular and infra-scapular arteries.

- F. 2. A Fore-arm, exhibiting the anastomosis and enlargement of Arteries consequent on division of the radial a little above the wrist. The principal anastomosis is effected by a large artery passing from the interosseous, at the lower edge of the pronator-quadratus muscle, across the front of the radius, to the radial artery about half an inch beyond the point of its division.
- F. 3. A Limb in which the Femoral Artery was tied in the middle of the thigh, eleven years before death, for the cure of a popliteal aneurism. The portion of artery obliterated by the ligature is about two inches in length, and extends to the origin of the profunda. Below this obliteration the artery was found open, but contracted, to its entrance into the ham where the aneurism was situated. The injection of the vessels displays the collateral branches by which the circulation was continued; these are situated chiefly at the back of the thigh and close upon the femur.
- F. 4. Part of a Lower Extremity in which the Femoral Artery was tied fifty years before death, for the cure of a popliteal aneurism. The portion of artery obliterated by the ligature and by the aneurism extends from the profunda downwards to the division of the popliteal. A mass of earthy matter occupies the situation of the obliterated artery in the upper part of the ham. The anastomosing vessels, by which the circulation was continued, are chiefly at the back of the thigh.

This operation was performed by John Hunter, and it was the fourth case in which he tied the artery at a distance from the aneurism.

The case is recorded in the "Transactions of a Society for the Improvement of Medical and Surgical Knowledge," Vol. i. p. 138; and in Hunter's Works, Vol. iii. p. 604, London, 1837.

Presented by Thomas Wornald, Esq.

SERIES XIV.

DISEASES OF THE LUNGS, PLEURA, AND BRONCHIAL GLANDS.

DISEASES OF THE LUNG.

Dilatation, wasting, and rupture of the air-cells (Pulmonary Emphysema).

Vesicular emphysema, 50, 51, 32, 11.

Sub-pleural and inter-lobular, 23, 31, 32.

Effusion of blood (Pulmonary Apoplexy), 30, 55, 8.

Effects of inflammation.

Consolidation or Hepatization, 27, 45.

Induration, 44.

Abscess, 10? 56.

Purulent infiltration, 46.

Gangrene, 36, 53.

Tumours and other allied morbid deposits.

Hard cancer, 3, 43?

Medullary cancer, 13, 19, 21, 22, 24, 25, 26.

Melanotic, 37.

Tubercle.

In small round masses (Miliary and Crude Tubercles) 6, 7, 9, 12, &c.

Infiltrated, 47, 20, 28, 33, 34, &c.

Formation and progress of cavities after the softening of tubercle,
9, 12, 33, 34, 35, 18, 40, 41, 10?

Diseases of the bronchial tubes.

Dilatation, 54.

Effusion of lymph (Bronchial Polypus), 29, 58; and some of the specimens of croup in Series XXIV.

Diseases of the pulmonary bloodvessels.

Compression, 16, 57; Series XIII. 2, 14, 15, 102, 103.

Obstruction by clots, 45, 48, 49, 52; Series XIII. 100.

Other diseases, Series XII. 55; Series XIII. 90.

DISEASES OF THE PLEURA.

Effects of inflammation.

Formation and organization of falso membrane, 2, 36, 10, 13, 38, &c.

Adhesion of the opposite surfaces, 18, 38.

Thickening, induration, and partial ossification of adhesions, 1, 4, 5, 39.

Contraction of the walls of the chest after adhesions of the pleura, 5, 38.

Suppuration of the pleura (Empyema), 42, 38.

Ulceration, 40; Series XVI. 34.

DISEASES OF THE BRONCHIAL GLANDS.

Cancer, 15, 17; Series XIII. 103; Series XXIV. 24; and in Series XXXV.

Tubercle, 16, 57.

Deposits of earthy matter, 14.

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1. PORTION of Pleura Costalis, thickened and indurated, so that it resembles a layer of cartilage.
 2. Portion of a Lung, from the surface of which a layer of false membrane formed upon the pleura has been reflected. The substance of the false membrane is compact and firm; but its free surface is shreddy. The pleura exposed by its reflection is thickened and opaque.
 3. Portion of a Lung containing tumours of lobular form, white, obscurely fibrous, and as hard as cartilage. The pulmonary texture adjacent to the tumours appears healthy. The largest tumour projects beyond the surface of the lung, and has some black substance deposited in it.
 4. A Right Lung. The pleura covering its upper, posterior, and lower parts is thickened, and converted into a substance resembling bone.
 5. Portion of the left side of a Chest, with part of the Lung adherent to the heads of the ribs. The ribs are closely approximated, and the lower intercostal spaces are obliterated. Nodulated deposits of bone have been formed in the pleura costalis: some of these form wide layers; others form irregular masses, fixed to the ribs.

6. Section of the Apex of a Lung from a young person, exhibiting the deposit of tuberculous matter in the form of miliary tubercles—small, round, pale masses imbedded in the substance of the lung, and projecting from its torn surface.
7. Portion of a Lung, with small tubercles scattered through its substance. The lung is minutely injected, but the injection does not appear to have penetrated the tubercles.
8. Portion of a Lung, in the tissue of which a firm pale substance is deposited in irregular masses. It is believed, from the history of the case, that these are the remains of blood effused in the form of pulmonary apoplexy. Some of the blood retains its ordinary colour around the margins of the deposits; but the rest has completely lost its colour.

From the same patient as No. 55 in Series XII.

9. Portion of a Lung, with small masses of tuberculous matter very thickly deposited in its substance. They have an opaque yellowish colour, and many of them exhibit minute cavities at their centres.
10. Portion of a Lung, exhibiting a circumscribed cavity lined by a layer of false membrane with a smooth inner surface. It is uncertain whether the cavity be that of an abscess of the lung, or a cavity formed between the lobes of the lung, the surfaces of which are in other parts united by false membrane.
11. Portion of a Lung, with Tubercles and enlargement of the air-cells. In some parts the air-cells appear simply enlarged; in others, small round cavities are formed by the coalescing of groups of cells. A number of such cavities are situated immediately beneath the pleura.
12. Portions of a Lung, in which tuberculous matter has been deposited. In the upper portion there are numerous miliary tubercles, arranged for the most part in groups; in the lower, there are several small irregular cavities, surrounded by similar

tubercles and by tuberculous matter diffusely infiltrated in the substance of the lung.

13. Portion of a Lung, exhibiting medullary substance infiltrated in large portions of its tissue.
14. Bronchial Glands, nearly the whole substance of which is replaced by earthy matter.
15. Sections of Bronchial Glands, which are greatly enlarged, and in which the place of the natural texture is occupied by a soft medullary substance. In one of them there are large cavities in the medullary substance, which were filled with blood. The right bronchus is compressed by the diseased glands.
16. Bronchial Glands, with the bifurcation of the Trachea and the adjacent parts. The bronchial glands are much enlarged, and tuberculous matter is deposited in them. The vena cava superior is flattened, and its calibre much reduced. Both the main branches of the pulmonary artery are also much compressed by the enlarged glands.
17. Bronchial Glands, with the Trachea, Heart, and Large Vessels. The glands are enlarged, and soft medullary matter is extensively formed in them.

From the same child as No. 19 in Series VI. Case-Book, Vol. i. p. 60, No. 106.

18. Portion of a Lung, in which there is a circumscribed cavity lined by a thin layer of false membrane. The surrounding substance of the lung is indurated and contracted, and contains some other similar cavities of smaller size. The pleura is much thickened and indurated, and its layers between the lobes of the lung are united.

It is probable that the cavities were formed in the progress of tuberculous disease.

19. Portions of a Lung, in which masses of a firm, white, cancerous substance are irregularly deposited. Some of the small branches of the pulmonary artery are filled with a similar

substance, which appears in them like fine ramifying lines in the substance of the lung.

20. Sections of a Lung, with large irregular masses of tuberculous matter infiltrated in its tissue.

21. The Right Lung of a child, with several large masses of a soft medullary substance, deposited in both its lobes.

From the same child as No. 19, in Series VI. and No. 17 in this Series.

22. Two Portions of a Lung, in each of which there are round masses of a firm, whitish, and, apparently, medullary substance. The pulmonary tissue surrounding them appears healthy.

23. Portion of a Lung, on which part of the Pleura Pulmonalis is distended into a large transparent sac, by air effused from ruptured air cells.

24. Portion of a Lung, in which are several large, round, and lobulated masses of a soft, brown, medullary substance. Most of these are situated near, or project from, the surface of the lung. The substance of the lung adjacent to them appears healthy.

25. A similar specimen.

26. A similar specimen.

27. Sections of a Lung, the substance of which is rendered uniformly pale and solid, by lymph effused in acute inflammation.

28. Portion of injected Lung, with groups of miliary tubercles and masses of tuberculous infiltration. None of the injection has penetrated the tubercles. The lung was injected from the pulmonary artery.

Presented by Richard Owen, Esq.

29. Ramified and tubular portions of Lymph, which were expectorated. Their form and size indicate that they had been lodged in the bronchial tubes.

Presented by Dr. Pardoe.

30. Portion of a Lung, with effusion of blood in its substance, constituting Pulmonary Apoplexy. The effused blood forms firm hard masses in the lung; at the borders of which masses, as well as in other parts, the lung appears healthy.
31. Portion of a Lung dried, with a large membranous sac on its surface, the consequence of distension of the pleura, by air effused under it from ruptured air-cells.
32. Portion of a Lung, exhibiting both the Vesicular and the Sub-pleural forms of Pulmonary Emphysema. In every part there is enlargement of the air-cells. The portions in which this change has taken place in the greatest degree, are much paler than the rest of the lung, and have not collapsed. They therefore form considerable projections at the edge and on the surface of the lung. In consequence of the rupture of some of the enlarged air-cells, air has passed beneath the pleura, and has elevated portions of it in the form of round membranous sacs.
33. Section of a Lung, the whole substance of which is made solid by the infiltration of tuberculous matter. The dark spots and lines visible in the yellow tuberculous matter are produced by the small remains of the substance of the lung. There are also numerous small irregular cavities in the lung, the result of softening of the tuberculous matter and ulceration. The boundaries of these cavities are formed by the tubercle softened and broken, and by the remains of the proper substance of the lung.
34. Portion of a Lung, exhibiting an extensive destruction of its substance consequent on the formation and progress of tubercle. The walls of the large cavity which occupies the place of more than half the lung, are composed of the pulmonary tissue, indurated, and infiltrated with tuberculous matter; and are rendered very irregular by the projection of numerous large branches of the bloodvessels, which have not been involved in the destruction of the adjacent parts. The pleura is thickened and has soft false membrane on its surface.

35. Portion of Lung, in which there are several large tuberculous cavities, with infiltration and induration of the pulmonary tissue remaining between them. Most of the cavities are lined by false membrane in thin and imperfect layers. The pleura is thickened, and false membrane is abundantly formed upon its surface.

Presented by Dr. Conquest.

36. A Lung, the lower part of which is in a state of gangrene. The gangrenous portion is pulpy, flocculent, and of brownish colour; and there are large bloodvessels extending through it, which have resisted the destructive process. Above the gangrenous portion the lung is solid and contracted, so that the entire thickness of the organ is here reduced to two-thirds of an inch. Over the seat of the gangrene a large portion of false membrane has formed upon the surface of the lung.

37. Portion of Lung, with melanotic matter diffused through its substance.

Presented by Dr. Norris.

38. Portion of Lung, with the Pleura covering it, and the pleura which lined the corresponding part of the chest. Both these layers of pleura are considerably thickened, especially in the lower part; and the sac of the pleura is almost completely obliterated by the adhesions of their opposite surfaces.

The patient was a woman, thirty years old, who, eighteen years before death, coughed up a large quantity of pus, which, it is presumed, had been contained in the cavity of the pleura. The corresponding side of the chest was very much contracted. Case-Book, Vol. i. p. 159, No. 185.

39. A large portion of bone-like substance, which formed in a false membrane uniting the opposite surfaces of the pleura.

The patient was an old man, who had long had dyspnœa and was subject to frequent affections of the chest.

40. Apex of a Lung, from a patient who died with Pneumothorax. On the anterior surface of the lung are two oval apertures, into which portions of glass are passed, and which lead into small

tuberculous cavities. There is a third aperture near them, of smaller size, and partially closed by false membrane. At the upper part of the lung there is a large cavity; and all the rest of the pulmonary tissue is occupied by tuberculous disease in different stages.

41. Section of the upper part of a Lung, in which a soft material, resembling mortar, and mixed with particles of calcareous substance, has been deposited in small cavities, which, it may be presumed, were previously occupied by tuberculous matter. Sections of two cavities are seen filled with this substance; two others have been partially emptied. The surrounding pulmonary tissue is condensed, dry, and of a dark grey colour, from the quantity of black matter deposited in it. The surface of the lung is deeply wrinkled and contracted over the remains of the cavities; and several bands of false membrane are attached to it at the same part.

From a patient who died of a disease independent of this condition of his lungs, and from whom the specimen of partially healed tuberculous ulceration of the large intestine (Series XVI. No. 71) was taken.

42. Portion of a Lung, with corresponding portions of pulmonary and costal pleura, from a case of empyema of long standing. The tissue of the lung is compressed. Both portions of pleura are covered by a layer of organized lymph, a line in thickness and coarsely granulated on its inner surface. The space between these layers was full of pus.

43. Portion of a Lung, in which there are several circumscribed deposits of a very firm, white and greyish, carcinomatous substance. Most of the deposits are on the surface of the lung and are flattened by the resistance of the wall of the chest. They are from a quarter to half an inch in diameter and irregular in their forms. The adjacent tissue of the lung is healthy.

From the same patient as the fibrous tumours of the breast, Series XXXV., and No. 24 in Series XV. Case-Book, Vol. i. p. 151, No. 175.

44. Section of the upper lobe of a Lung, the texture of which has been consolidated and rendered hard, dense, and dry, by chronic inflammation. It has retained almost exactly the

character which it had in the recent state: and is throughout of a pale, dirty white colour, mottled with numerous spots of black deposit. On its cut surface it presents the appearance of numerous very minute bodies like white seeds or grains, not more than one-sixth or one-eighth of a line in length, which are thickly scattered throughout the consolidated substance; but the surface of the section has no generally granulated appearance.

From a man forty-eight years old. The signs of pneumonia had existed nearly five weeks. Case-Book, Vol. i. p. 190, No. 211.

45. Sections of the upper lobe of the Lung of a child, consolidated by inflammation. The surfaces of the sections are minutely granular, of a pale dirty yellowish white colour, except in two or three places where there are traces of effused blood, and in those parts in which spots of black matter have been deposited. Some of the branches of the pulmonary arteries are blocked up by fibrine. There are some thin deposits of firm lymph upon the surface of the pleura covering the upper section.
46. Section of a Lung, of which the whole of the lower lobe is of a pale, but rather bright, yellow colour, from the infiltration of pus. The infiltrated tissue was heavy, but soft and easily broken: and the surface of the section has no distinctly granular aspect.
47. Section of a Lung, the tissue of which is solid, heavy, and of a pale yellowish white colour, from uniform infiltration of tuberculous matter. Its pleural surface is covered by a thin layer of tough false membrane with small tubercles scattered in it.
48. Portion of a Lung, in which the main division of the pulmonary artery is nearly filled by a firm, grumous, brown and red clot of blood, slightly adhering to its walls, and having all the characters of a clot formed before death. At its distal end the clot divides into four portions, which extend into and nearly fill as many branches of the pulmonary artery in which it lies. One of these portions is intimately united to the wall of the arterial branch in which it is contained.

49. Another portion of the same Lung. A bristle is passed beneath a narrow band, formed probably by the further organization of blood coagulated during life, within the branches of the pulmonary artery. One of two such bands is attached only at its ends to the inner surface of the branch of the artery: the other is attached by nearly the whole of one of its surfaces to the angle and adjacent parts of a large branching arterial trunk. The clots are firm and pale pink, and have completely coalesced with the wall of the artery. In some of the smaller branches of the artery there are short round grumous coagula, like those described in the last preparation.

The patient, a woman seventy years old, died after suffering with affection of the chest, and œdema of the lower extremities, for five weeks. Two days before her death she began to sink rapidly. The case is related by Mr. Paget, and the specimen No. 48 is figured, in the *Medico-Chirurgical Transactions*, Vol. xxvii. p. 178, Pl. iii. fig. 3. London, 1844.

50. Dried Sections of a Lung, affected with Emphysema in an extreme degree. The lung is greatly enlarged: none of the vesicular structure remains; but in its place are large and irregular spaces with imperfect partitions formed by the remains of the thin layers and bands of fibro-cellular tissue which separated the pulmonary lobules. The whole of the right lung was in the same state. The left lung was emphysematous in a less degree.

The patient was a middle-aged man, of whose history nothing was known except that he died with diseased liver, after having frequently passed gall-stones.

51. Dried Sections of a Lung affected with a much less degree of Emphysema. The air-cells are regular in their form and arrangement, but larger than is natural.

52. Portion of Lung, with some of the large branches of the Pulmonary Artery laid open and containing firm, dry, and cylindrical clots of blood, which completely filled their cavities, and had probably been formed several days before death.

From a man fifty years old, who, while suffering with only slight symptoms of pulmonary disease, died suddenly. The case is related by Mr. Paget, in the *Medico-Chirurgical Transactions*, Vol. xxviii. p. 353. London, 1845.

53. Portion of the lower lobe of a Lung, with cavities formed after circumscribed gangrene. The walls of the largest cavity are defined, and bounded by consolidated pulmonary tissue: they are irregular, and many small vessels are prominent on their surface. In the adjacent part of the lung are two similar cavities of smaller size. The pleura is thinly covered by organized false membrane.

From a boy fifteen years old, who died a fortnight after receiving a severe compound fracture of the skull, which was followed by hernia cerebri. No sign of disease of the chest was observed. He had extensive suppuration between the membranes of the brain.

54. Portion of a Child's Lung, in which many bronchial tubes are dilated. The first portions of the larger tubes are of their natural size, but as they proceed in the substance of the lung, they become gradually wider; till near the surface of the lung they gradually contract, and appear to end in closed extremities. The walls of the dilated portions are thin, smooth, and not marked, as the others are, by the longitudinal elastic fibres projecting on their surface: the adjacent pulmonary tissue appears healthy.

55. Sections of a Lung, with Pulmonary Apoplexy. In some parts the effused and coagulated blood forms hard, dark, circumscribed masses in the substance and at the borders of the lung: in other and more numerous parts, it appears like close-set, round, and oval spots or blotches of blood, in healthy pulmonary tissue.

From a young man, who died with an aneurism of the arch of the aorta, the sac of which communicated by three small apertures with the trachea. It was believed that repeated small hemorrhages into the trachea had occurred during three or four days before death; and that the blood had flowed down the bronchial tubes into the air-cells.

56. Portion of Lung, in which there is an irregular oval abscess, with defined walls, smoothly lined by a thin layer of soft false membrane. The cavity was filled with thick yellow pus: branches of bloodvessels project upon its walls; and the surrounding substance of the lung is solid and very vascular, but not infiltrated with pus.

From a man between fifty and sixty years old, who died with aneurism of the

arch of the aorta. He was not supposed to have disease of the lungs. The cured popliteal aneurism in Series XIII. No. 114, was taken from the same patient.

57. A Child's Heart, with a cluster of bronchial glands greatly enlarged, indurated, infiltrated with tuberculous matter, and compressing the trachea and principal branches of the bronchi and the pulmonary arteries and veins.

58. Portion of a Lung, in which all the bronchial tubes are lined with thin layers of lymph. The adjacent substance of the lung appears oedematous and heavy.

From a girl who died with signs of laryngitis which supervened in the course of typhus fever. The larynx is preserved in Series XXV. No. 19.

SERIES XV.

INJURIES AND DISEASES OF THE STOMACH.

Digestion after death, 8, 13, 11 ?

Rupture, 18, 22.

Effects of poisons.

Arsenic, 4 ?

Oxalic acid, 10.

Sulphuric acid, 9, 15, 23, 27, 28.

Simple thickening and induration, 1, 6 ; and some of those next referred to.

Ulceration.

Follicular ulcers (Hemorrhagic Erosion), 24, 26, 4 ?

Perforating ulcers (Simple Chronic Ulcer), 1, 14, 25, 29.

Tumours, and other allied morbid growths.

Polypi, 17.

Hard Cancer, 5, 16.

Medullary cancer, 3, 7, 12, 19, 6 ? 20 ?

Gelatiniform cancer, 2.

Tubercle, 21.

1. PORTION of a Stomach, in which there is an Ulcer extending completely through its coats. The ulcer is situated near the lesser arch ; its edges are smooth and abrupt, shelving towards the aperture in the peritoneal coat, which is much smaller than that in the mucous coat. The tissues immediately around the ulcer are thickened and indurated, but the rest of the stomach appears healthy.

2. Portion of a Stomach, exhibiting the changes of structure constituting Gelatiniform Cancer, with ulceration of its coats. There is a large and deep ulcer of circular form, the base and borders of which are formed by a thick, hard, fibrous tissue, containing minute cells filled by a clear jelly. In two situations the ulcer has penetrated all the coats of the stomach.

3. A Stomach, with a large round lobular tumour at the pyloric end, and smaller tumours near it. The largest tumour is attached to the exterior of the pylorus and the adjacent parts of the stomach and duodenum. It consists of a close-textured, broken, medullary substance, intersected by white bands. Some of the other tumours project into the cavity of the pyloric portion of the stomach; and in the corresponding part of the mucous membrane there is a large ulcer with elevated and everted edges.

4. Portion of a Stomach, exhibiting numerous small ulcers in the mucous membrane. The ulcers are from half a line to a line in diameter, round, oval, and angular in form; and some of them were, in the recent state, black, probably with effused blood.

From a woman to whom small doses of arsenic had been administered for a fortnight, on account of a cutaneous affection. The mucous membrane of the stomach and intestines appeared highly vascular. Case-Book, Vol. i. p. 25, No. 58.

5. The half of a Stomach, enlarged, and exhibiting general thickening and induration of its coats, with ulcers in the mucous membrane. In the situation of the mucous and sub-mucous coats is a layer of dense, hard, obscurely fibrous white tissue; and the inner surface of the mucous membrane has a peculiar villous or flocculent appearance. The muscular coat exhibits the appearance of vertical and branching white bands intersecting a thick layer of greyish firm tissue. The tissues external to the muscular coat are thickened, indurated, and consolidated with the surrounding parts.

From the same person as the diseased large intestine, Series XVI. No. 23.

6. Portion of a Stomach, exhibiting a general thickening of its coats,

with ulceration. The ulcer is of an oval form ; its edges are smooth and abrupt ; its base is hollow, but smooth ; the tissue around it is elevated and deeply wrinkled.

7. The Pyloric portion of a Stomach, in which, immediately beneath the mucous membrane near the pylorus, there is a broad, flat, and firm spongy tumour. The thick layer of tissue, which occupies the place of the muscular coat, between the tumour and the peritoneum, is very hard, and presents the same greyish striated appearance as that in No. 5.

The patient was a man thirty-nine years old. Signs of the disease had existed for six months before death. Case-Book, Vol. i. p. 153, No. 176.

Presented by George Mantell, Esq.

8. The Stomach of a Child, presenting the appearances produced by digestion acting after death on the walls of the organ itself. There are four large irregular apertures through the coats at the great end and middle of the stomach. The edges of these apertures are soft and flocculent, and the remaining mucous membrane of the adjacent parts is soft, pale, and almost gelatinous in its appearance.

The child was ten years old, and died, after a short illness, with inflammation of the trachea.

9. The Stomach of a person who died in consequence of having taken Sulphuric Acid. The deep red colour, mottled with black, and extending throughout the interior of the stomach, is occasioned by blood effused from the eroded vessels and acted on by the acid. The greater part of the mucous membrane is destroyed ; and the surface exposed is rough and shaggy. In the œsophagus and near the pyloric end of the stomach, portions of the mucous membrane remain, and are red, thick, and corrugated.

The duodenum of the same patient is in the next Series, No. 45.

10. The Stomach of a person who died in consequence of having taken Oxalic Acid. The greater part of the mucous membrane is of a dark brown colour, and very soft. Small vessels full of black blood are in many parts traceable beneath it. In some situations it is so completely disorganized as to have

spontaneously separated in loose shreds. Upon the œsophagus, the mucous membrane is corrugated.

11. Portion of a Stomach, in which there is an aperture with a dark discoloration of the membrane around it. The discolored portion is very thin, and the aperture in its centre has ragged edges.

It is uncertain whether these changes are due to ulceration, or to the action of the secretions of the stomach after death.

12. A Stomach, with a large, probably medullary, tumour growing from its mucous membrane near the pylorus. The tumour is of an oval form, lobed on its surface, and consisting of a firm substance intersected by white lines. The mucous membrane immediately around it is thickened and indurated.

From a man fifty-two years old. The disease appeared to have been four years in progress. Case-Book, Vol. i. p. 30, No. 66.

Presented by William Radnor, Esq.

13. Portion of a Stomach, exhibiting attenuation, with paleness and softening, of a part of its great arch. The dark streaks in the altered portion of the stomach are produced by the blackening of the blood coagulated in its vessels.

It is probable that these changes were occasioned by the action of the secretions of the stomach upon its coats after death.

14. Part of a Stomach, with small portions of the Liver and Pancreas adherent to it. There is a large and deep oval ulcer just below and to the right of the cardiac orifice of the stomach, which has extended into the pancreas, destroying in its progress a portion of the splenic artery. A bristle is introduced into the ulcerated orifice of the artery, from which fatal hemorrhage took place into the cavity of the stomach.

15. A Stomach from a young woman, exhibiting the effects of Sulphuric Acid. There is an aperture with ragged edges, about half an inch in diameter, in the middle of the great arch of the stomach. The mucous membrane around the aperture is thickened, black, and charred by the acid. The stomach is closely contracted.

16. Section of a Stomach of very small size, and exhibiting increased thickness with altered structure of the several tissues between its peritoneal and mucous coats. The mucous membrane appears healthy; but in the place of the submucous coat is a layer, from one to three lines in thickness, of a hard, white, obscurely fibrous tissue. The place of the muscular coat is occupied by a layer of dense greyish substance, intersected by radiating white lines, and from one to three lines in thickness. The peritoneal coat appears healthy, but the subperitoneal is thickened, hard, and consolidated.

From a young man.

Presented by John Lawrence, Jun. Esq.

17. A Stomach, exhibiting numerous pendulous and lobulated growths, like polypi, from its mucous membrane. They apparently consist of a tissue similar to that of the membrane itself. The intervening parts of the mucous membrane have a peculiar villous appearance, like the interior of small intestine when the villi are distended.
18. Portions of the Stomach and Œsophagus of a middle-aged man who, it was supposed, had attempted to poison himself with laudanum. There is an extensive laceration through all the coats of the stomach a little beyond the entrance of the œsophagus; and other smaller lacerations are visible in the adjacent parts of the mucous and peritoneal coats. A large quantity of blood is effused from the lacerations into the surrounded tissues of the stomach.
- These lacerations were the effects of over-distension, the stomach-pump having been too freely used for the removal of the poison.
19. Portion of the great end of a Stomach, exhibiting a large cancerous ulcer of its coats. The arch of the colon is adherent to the diseased part, and is penetrated by the ulcer extending through it from the stomach.
20. Portion of the great end of a Stomach, exhibiting several distinct ulcers on its mucous membrane. Each ulcer is nearly circular, and has a smooth elevated surface, and a thickened margin.

The intervening portions of the mucous membrane appear healthy.

21. Portion of a Stomach, with several small oval masses of tuberculous matter deposited beneath its peritoneal coat. A section has been made through one of them.

From a lad who died with tubercles in his lungs and in many other organs.

22. Portion of a Stomach and Duodenum. There is an irregular aperture, more than an inch in width, extending through all the coats of the stomach near the pylorus. In several other parts the peritoneal coat is irregularly torn.

These injuries were produced by the crushing of the abdomen, the stomach at the time being full of food.

23. The Stomach of a young woman who died thirty hours after taking nearly an ounce of sulphuric acid. It is contracted, and, in its interior, deeply corrugated. The mucous membrane is thickened and indurated, and of a deep black and crimson colour from congestion and extravasation of blood. These effects of the acid are most distinct on the summits of the ridges formed by the corrugated mucous membrane.

24. Portion of a Stomach, in the mucous membrane of which there are numerous circular ulcers. They vary from half a line to two lines in diameter, and penetrate the whole thickness of the mucous membrane, which in the intervening spaces appears healthy. Many of them in the recent state contained points of effused blood.

From a woman forty-five years old, from whom the fibrous tumours of the breast in Series XXXV. were taken. Case-Book, Vol. i. p. 151, No. 175.

25. The Pyloric portion of a Stomach, with the commencement of the Duodenum. About two inches from the pylorus, in the lesser arch of the stomach, is an ulcer which has penetrated through all the coats. In the peritoneal coat the aperture is oval, abrupt, and sharp-edged; that in the mucous membrane has similar characters, but is much larger; the base of the ulcer tends smoothly and gradually from the aperture in the mucous, to that in the peritoneal, coat. Around this ulcer are several of

smaller size and irregular in form, which have removed only the mucous membrane. Their margins are clean and abrupt, and their bases are smooth. The intervening tissue appears healthy.

26. The Cardiac portion of a Stomach, with the lower part of the œsophagus. There are six superficial ulcers of irregular shape, and from two lines to half an inch in width, in the mucous membrane just below the cardiac orifice. Their margins are clearly defined, their bases smooth, and of a deep black colour, from blood effused in and upon them and discoloured by the action of the gastric fluid. All the adjacent textures of the stomach appear healthy. In the lower part of the œsophagus the epithelium has been removed: its bloodvessels are in many parts intensely congested, and the blood in them is deeply blackened.

From an elderly man who died with granular disease of the kidneys, dropsy, and enlarged heart, without any probability of having taken poison, and without having exhibited any remarkable signs of disease of the stomach.

27. The Stomach of a woman who died ten days after taking sulphuric acid. Part of its mucous membrane is soft and of a dirty ash-brown colour, and near its pyloric end a portion between three and four inches in diameter has sloughed, and, except at one margin, has been completely separated. The slough hangs loosely; it is very soft and flocculent at its edges, and of brown and yellow colour. About the cardiac orifice of the stomach, (which is shown at the back of the preparation,) there is a rough and somewhat granulated surface, from which a layer of mucous membrane, after sloughing, completely separated.

28. Part of the Œsophagus of the same patient, exhibiting an extensively and irregularly ulcerated surface, from which a slough of the mucous membrane separated. The destruction has been most extensive in the lower part of the œsophagus, the ulcerated and granulating surface of which was continuous with that of the cardiac orifice of the stomach, shown in the preceding preparation. Part of the slough, a portion of which

includes the whole circumference of the lining membrane of the œsophagus, is suspended in the upper part of the bottle.

It is uncertain how much sulphuric acid the patient swallowed. She lived ten days, and appeared to have recovered from the effects of the poison, when she died with bronchitis.

29. Portion of the anterior wall of a Stomach, in which there is an oval ulcer, like that in No. 25. The form of the base of the ulcer indicates that it made progress from the mucous to the peritoneal coat, by several distinct steps or stages.

From a girl twenty years old, who, while in apparently good health, was suddenly attacked by acute peritonitis, and died in twenty hours.

Presented by J. F. Harding, Esq.

SERIES XVI.

INJURIES AND DISEASES OF THE INTESTINES, PERITONEUM, AND MESENTERIC GLANDS.

INJURIES AND DISEASES OF THE INTESTINES.

Injuries by violence, 36, 51.

Rupture by distension, 82, 84 ?

Obstruction by foreign bodies, 82, 84, 30, 65.

Effects of poison, 45.

Peculiar discharges, 39, 44, 63.

Hypertrophy, or simple enlargement

Of the muscular coat, 32, 59, 64.

Of the glands and villi, 8, 16, 26, 46, 77, 78.

Thickening and induration, 7, 29, 47, 59.

Abscesses opening into intestines, 28, 34, 37, 50, 69, 70, 73, 83.

Ulceration.

Simple and superficial, 7, 52, 64.

Catarrhal or diarrhœal, 15 ? 24 ? 29 ?

Perforating, 55, 67, 69, 72.

Dysenteric, 80, 81, 21, 74, 17 ? 18 ?

Typhous, 87, 20, 48, 49, 79, 88, 22, 89, 90, 91, 75, 40.

Cancerous and tuberculous ; referred to below.

Stricture.

Muscular, 31.

From annular thickening and contraction, 7, 32, 59, 82.

From thickening and contraction of large portions of the canal, 33, 34,
37, 47, 64, 69.

From tumours, 42, 56, 68.

From displacement, &c. ; see Herniæ, in the next Series.

Tumours and other allied morbid growths.

Hard cancer, 23, 2 ?

Medullary cancer, 19, 25, 42, 56, 68, 60, 85, 86.

Tubercle, 11 ? 12, 13 ? 76, 71, 66, 14 ? and see references under Diseases
of the Peritoneum.

DISEASES OF THE PERITONEUM.

Thickening and induration, 3, 4, 6, &c.; and in the next Series.

Formation of adhesions, 3, 6, 40, 57, &c.; and in the next Series, 39, &c.

Ulceration; see references under Perforating Ulcers.

Cancer, 2? 10, 53? 54, 85, 86.

Tubercle, 1, 6, 9, 53, 61, 66.

DISEASES OF THE MESENTERIC GLANDS.

Enlargement, 87.

Cancer, 5.

Tubercle, 41, 62, 66.

Peculiar Diseases of certain portions of the Intestines.

Abscess connected with the cæcum, 23, 70, 83.

Foreign bodies in the appendix cæci, 30, 65.

Rectum.

See references above to Abscesses and Strictures, many of which are connected with the rectum.

Fistula, 34, 35, 37, 46, 50, 69.

Hemorrhoids, 27, 38, 43.

1. PORTION of small Intestine, with numerous minute, round, and oval masses of Tubercle in the tissue of its peritoneal coat and in the adjacent part of the mesentery. The portions of the peritoneum between the tubercles appear healthy.
2. Portion of small Intestine, beneath the peritoneal coat of which there are several round and nodulated masses of a firm pale substance.
3. Portion of small Intestine, with its Mesentery and a part of the Peritoneum from the adjacent wall of the abdomen. The peritoneum is, in every part, thickened and indurated, and its free surface is covered by a large quantity of false membrane. Each of the portions here shown is nearly an eighth of an inch in thickness, and is formed of tough, coarsely laminated tissue.
4. Portion of thickened Peritoneum, from the abdominal walls of the patient from whom the preceding specimen was taken. It is similarly thickened, and its internal surface is lined by lymph recently effused.

5. A large mass of Morbid Structure, which occupied the situation of the Mesenteric Glands. It is composed of a cluster of distinct tumours, of a soft, reddish-brown, vascular, and spongy medullary substance.

From the same patient as No. 6 in Series XVIII., and No. 40 in Series XXVIII.

6. Portion of small Intestine, with thick-set clusters of miliary tubercles in its peritoneal coat. The peritoneum is generally thickened, and many of the convolutions of the intestine are adherent.
7. Portion of Jejunum and two portions of Ileum. In each portion of intestine there is a circular constriction by which the canal is almost completely closed. At each of the constricted parts a deep irregular ulcer extends in a narrow band round the whole circumference of the mucous membrane. Above each of them, the intestine is widely dilated, its coats are generally thickened, and the muscular coat especially appears hypertrophied.

The patient, a woman thirty-seven years old, suffered for three years before death with attacks of constipation and severe pain in the abdomen. The strictures were about two feet distant from each other; and there was another besides the three here shown. Case-Book, Vol. i. p. 32, No. 69.

Presented by John Bury, Esq.

8. Portion of an Ileum. The Peyer's and solitary glands and the villi are of unusually large size and very numerous.

From a patient who died with Asiatic cholera.

9. Portion of small Intestine, exhibiting the results of chronic peritonitis. Two of its convolutions are closely united, and are enveloped by shreddy membrane formed of recently organized lymph. In the substance of the false membrane, as well as in the peritoneum, there are numerous miliary tubercles.
10. Portion of the Transverse Arch of a Colon, having a large tumour attached to it. The tumour occupies the place of the natural structure of the omentum, and appears to be formed by the agglutination of many small and round masses of a firm texture.

11. Portion of an Ileum, exhibiting two ulcers of the mucous membrane. Both the ulcers extend completely round the intestine, and their margins are irregular and shreddy.
12. Portion of a Jejunum, with a tuberculous ulcer of its mucous membrane. The ulcer is of an oval form, and penetrates at one point through the coats of the intestine. There are small tubercles beneath the corresponding portion of the peritoneum.
13. Portion of the upper part of an Ileum, exhibiting four small, but deep, ulcers in that part of the mucous membrane which is occupied by a patch of Peyer's glands. The rest of the patch is unusually developed.
14. A convolution of Jejunum. An irregular ulcer extends completely through the coats of its two contiguous and adherent portions.
15. Portion of a Jejunum, the coats of which are generally thickened. There is also a diffuse superficial ulceration of the mucous membrane, with deeper ulcers of the free margins of the valvulæ conniventes.

From a patient who died with a medullary and melanotic tumour in the liver, and from whom No. 24 in this Series, and No. 11 in Series XVIII. were taken. The case is described by Mr. Langstaff, in the *Medico-Chirurgical Transactions*, Vol. iii. p. 277. London, 1812.

16. Portion of an Ileum. The Peyer's and the solitary glands are enlarged and very prominent. The villi also are very turgid; but their tissue, like that of the rest of the intestine, appears healthy.

From the same patient as No. 5 in Series XIII. Death was the consequence of diabetes. Case-Book, Vol. i. p. 14, No. 31.

17. Portion of Intestine, of which all the coats are thickened. The mucous membrane is thrown into irregular eminences, which exhibit a rough surface and numerous minute points of ulceration.

From a patient who died with dysentery.

18. Portion of Intestine, thickened, and with diffuse ragged ulceration and sloughing of the mucous membrane.

From a patient who died with dysentery.

19. Portion of a Jejunum, with several small, disk-shaped, masses of medullary substance projecting into its canal from the sub-mucous tissue, in which they appear to have their origin. They are covered by mucous membrane.

20. The lower part of an Ileum, exhibiting enlargement and elevation of the patches of Peyer's glands, with sloughing and ulceration of small portions of them. Some of the sloughs, incompletely detached, are infiltrated with fæcal matter. The portions of intestine intervening between the patches appear healthy.

From a patient who died with typhus fever.

21. Portion of a Colon, in which the mucous membrane is extensively and raggedly ulcerated. Large pieces of its remains hang in shreds in the cavity of the intestine. Many small distinct ulcers, also, may be seen, the result, apparently, of disease of the follicles of the intestine.

From a man who died with dysentery of long continuance. The whole of the large intestines were similarly diseased. The small intestines and other abdominal organs were healthy. Case-Book, Vol. i. p. 23, No. 52.

22. Portion of an Ileum, exhibiting an ulcerated surface of the mucous membrane after the detachment of numerous sloughs like those in No. 20.

From a case of typhus fever.

23. Portion of a Colon. In the greater part of its extent, the sub-mucous coat is from one to two lines in thickness, and of close fibrous texture, elevating the mucous membrane into irregular folds. The section of the muscular coat exhibits numerous white bands intersecting a dense greyish structure, the surface of which has a somewhat glistening aspect.

From the same patient as No. 5 in Series XV.

24. Portion of a Colon, exhibiting a general thickening and induration

of the mucous membrane, with wart-like excrescences, and numerous small ulcers upon its internal surface.

From the same patient as the portion of Jejunum, No. 15, in this Series.

25. Portion of a Colon, with Medullary Tumours projecting into its cavity. The largest of these growths forms a broad band round the whole interior of the intestine, and must have almost completely obstructed the canal. Its texture is broken and flocculent. The adjacent walls of the intestine are thickened, but their texture does not appear altered.

26. A Cæcum, exhibiting a remarkable development of its follicles, the large open orifices of which are seen on every part of the surface of the mucous membrane.

From the same diabetic patient as the portion of Small Intestine, No. 16.

27. Portion of a Rectum. At its lower border the mucous membrane is raised in folds and lobular tumours, by the hemorrhoidal enlargement of the subjacent veins.

28. A Cæcum, with a portion of the abdominal walls from the right inguinal region. The anterior part of the cæcum is united to the peritoneum lining the adjacent muscles; at this part also the mucous membrane of the cæcum is removed, and irregular fungous growths occupy its place. A fistulous canal, through which a quill is passed, extends from the cavity of the cæcum through the middle of the growths and through the adjacent part of the abdominal walls.

The patient was a man thirty-five years old. An abscess in the groin had existed, it was believed, previous to the ulceration through the cæcum. There was similar ulceration, with fungous growths, in parts of the small intestine. Case-Book, Vol. i. p. 26, No. 59.

29. Portion of a Colon generally thickened, and exhibiting numerous minute ulcers of its mucous membrane.

30. An Appendix Cæci, in which a green-gage stone is lodged.

From a child who died with acute peritonitis. The stone became lodged in the cæcum four days before death, and the peritonitis commenced shortly afterwards. Case-Book, Vol. i. p. 18, No. 38.

31. Portion of a Rectum, the cavity of which, at its upper part, is contracted to a quarter of an inch in diameter, without any visible change of structure. The contraction includes about an inch of the length of the intestine: it was probably occasioned by the action of the muscular fibres.
32. Portion of a Rectum, exhibiting a general thickening and induration of its coats, and a very close annular stricture between two and three inches from the anus. Above the stricture the intestine is dilated, and its muscular coat is thick and strong; below it, there is diffuse superficial ulceration of the mucous membrane. A portion of quill is passed through the strictured part.
33. A Rectum, exhibiting a contraction of its cavity which commences two inches above the anus, and is thence continued four or five inches upwards. The coats of the intestine are generally thickened and indurated, and the divided edges exhibit white bands intersecting a very firm substance. The cellular and adipose tissue around the rectum is also thickened, and is converted into a hard brawny substance, in which the posterior surfaces of the uterus, vagina, and broad ligaments are involved.
34. Portion of a Rectum. Its coats are generally and greatly thickened, indurated, and consolidated with each other and with the surrounding parts. Just above the anus there are numerous ulcerated apertures, with smooth edges, which lead through the walls of the rectum into short fistulous canals in the surrounding indurated tissue. One of the canals extends beyond this tissue through the coats of the bladder into its cavity.
35. Portion of a Rectum, exhibiting a fistula, which extends from the anus upwards between the fibres of the levator ani muscle and the longitudinal muscular fibres of the intestine. A bristle is passed through the fistulous passage; it does not open into the rectum.
36. Portion of a Rectum from a young person. A quill is passed through an aperture in the upper part of the intestine where it

is covered by peritoneum ; this aperture was made by the end of a metallic clyster-pipe.

The clyster was injected into the peritoneum, and produced fatal peritonitis.

37. A Rectum from a middle-aged woman. Its mucous membrane is completely removed by ulceration, to the extent of several inches above the anus. Abscesses, which formed in the cellular and adipose tissue around the lower part of the intestine, have burst into it by several openings ; and all the adjacent tissues, as well as the coats of the rectum itself, are indurated and consolidated.
38. A Rectum, around the lower part of which the veins, dilated into hemorrhoidal tumours, have been filled with wax injected into the inferior mesenteric vein.
39. Soft Substances discharged per anum. Some of them resemble pieces of membrane ; others have a tubular form ; and others resemble pieces of fat.
40. Portion of an Ileum, exhibiting a broad, smooth-based ulcer of its mucous membrane, and a portion of omentum firmly adherent to its exterior in the situation of the ulcer. The ulcer has the characters of one formed in typhus fever and nearly healed.
41. Mesenteric Glands enlarged and filled with a soft tuberculous substance. The superior mesenteric artery and some of its branches are imbedded among them.
42. A Rectum, in which distinct masses of soft, spongy, medullary substance have grown from the mucous membrane for about three inches above the anus. Around these masses its coats are thickened and ulcerated.
43. Portion of a Rectum with Hemorrhoids. The surfaces of the hemorrhoids are formed partly by the mucous membrane of the rectum, and partly by the external integuments thickened and raised in irregular folds around the margin of the anus.

44. Soft Substances, like those in No. 39, discharged per anum.
45. A Duodenum, exhibiting the effects of Sulphuric Acid. The mucons membrane is very dark with congested vessels and effused blood ; it is, in some situations, corrugated ; in others, completely destroyed.

From the same patient as No. 9 in Series XVI.

46. Portion of a Rectum, with the Anus. Irregular and branched fistulous passages, whose course is indicated by bristles, extend in various directions around the exterior of the rectum, but none of them open into it. They are lined by soft and smooth membrane. The mucous follicles of the intestine are much enlarged.
47. A Rectum, exhibiting a contraction of its canal which commences an inch above the anus and is continued five inches up the intestine. The coats of the intestine are generally thickened, and of very dense texture ; the mucous membrane in some situations is tuberculated, and in others ulcerated. The cellular and adipose tissue around the intestine is indurated. A portion of the coats of the bladder has undergone the same change of structure as the coats of the rectum.
48. A Cæcum with a portion of the Ileum, exhibiting enlargement and sloughing of the Peyer's and Solitary Glands. Many of the glands are simply enlarged ; others have sloughed with portions of the tissue in which they lie ; and in most instances the sloughs appear to have been in process of detachment. There are also several ulcers in the cæcum and its appendix.

From a case of typhus fever.

49. A similar specimen.
50. Portion of a Rectum, with a Fistula extending for two inches upwards on its exterior, and then suddenly opening into its cavity. The passage is lined by a smooth membrane, like the mucous membrane of the rectum itself.

51. Portion of an Ileum, exhibiting a complete transverse rupture of its coats. A thin shred alone connects its two portions.

The injury was the result of external violence in the same person as the ruptured Vena Cava, in Series XIII. No. 71; and the ruptured Bladder, in Series XXIX. No. 21.

52. A Rectum, in which there is diffuse superficial ulceration of the mucous membrane. A portion of the mucous membrane is separated from the muscular fibres, which are thickened and increased in firmness.

53. A Portion of small Intestine, in which there are groups of minute, white, and firm tubercles beneath the peritoneal coat.

Presented by S. G. Lawrance, Esq.

54. Portion of the Arch of a Colon, and the great Omentum, from the same patient as the preceding specimen. The natural structure of the omentum is entirely removed, and in its place there is a firm white substance nearly an inch in thickness, and apparently consisting of an aggregate of tubercles. Distinct tubercles are, also, formed beneath the peritoneal covering of the intestine.

55. A Duodenum, with part of a Stomach. There are two oval ulcers about half an inch in diameter, and many of smaller size, in the mucous membrane of the duodenum. The two large ulcers have extended beyond the mucous membrane, and penetrated all the coats of the intestine. One of them is closed by the contiguous adherent surface of the pancreas: the other opened into the cavity of the abdomen.

From a child about ten years of age, who died suddenly during the progress of recovery from a burn. Case-Book, Vol. i. p. 103, No. 131.

56. A Rectum and Urinary Bladder. Soft medullary tumours, arising from the mucous membranes of the rectum in its whole circumference, project into the cavity of the intestine, from the anus for about four inches upwards. The cellular tissue between the bladder and rectum is thickened and indurated.

57. Portions of Abdominal Muscles, and of a Colon. The peri-

toneum lining the muscles is connected with that covering the intestine, by a newly formed membrane of considerable extent, in which many large bloodvessels are displayed by injection.

58. Portions of small Intestine, firmly united by thick layers of organized lymph, in which, as well as in the coats of the intestines, there is abundant formation of tuberculous matter.

Presented by S. G. Lawrance, Esq.

59. A Rectum, with a portion of the sigmoid flexure of the Colon. The rectum presents an annular contraction with thickening, induration, and superficial ulceration of its coats, in the line of its junction with the colon. The contraction of the rectum was so close and firm that a finger could not be passed through it. The colon is dilated and hypertrophied. Except at the annular contraction the rectum is healthy.

60. Portion of small Intestine, with the mesentery. Numerous soft, very vascular, and flocculent, medullary tumours, of various sizes, arise from the peritoneal surface of the intestine and mesentery. The injection of the tumours shows that they chiefly consist of minute vessels.

61. Portion of a Jejunum, injected and dried. Its opposite peritoneal surfaces are adherent, and miliary tubercles are formed between its coats and in the substance of the false membrane.

62. Sections of Mesenteric Glands, enlarged and nearly filled with tuberculous matter. The injection displays the vascularity of the small portions of the healthy glandular tissue which remain around the morbid deposit; but none of the injected fluid appears to have entered the tuberculous matter.

From the same patient as No. 61.

63. Portions of Lymph and Mucus discharged from the intestines.
64. The Rectum of a girl twenty-five years old. Its mucous membrane is entirely removed by ulceration for several inches

above the anus; and above the ulcerated part it is slightly thickened. The muscular and other coats of the intestine are thicker and denser than is natural, but exhibit no morbid alteration of their tissue.

65. A Cæcum, with its Appendix. The appendix is dilated and its walls are thickened. In the middle of its course there are two large ulcerated apertures penetrating its coats; which apertures, it is presumed, were the consequence of the lodgement of a gall-stone in its cavity.

From a man thirty-eight years old. The gall-stone became lodged in the appendix nine days before death: it produced peritonitis, and complete obstruction of the intestines for four days before death. Case-Book, Vol. i. p. 99, No. 129.

Presented by H. Bateman, Esq.

66. Portion of small Intestine, in which, over an ulcer of the mucous membrane, tuberculous matter is deposited in small masses in the tissue beneath the peritoneum. The lymphatics proceeding from this part and ramifying between the coats of the intestine are also filled with tuberculous matter.

From a man between twenty and thirty years old. He had disease of the hip-joint of twelve years' standing, and extensive tuberculous disease of the small intestines and several other organs.

67. Portion of a Duodenum and Stomach, from a young man. A circular ulcer with smooth abrupt margins has completely penetrated the coats of the duodenum close to the pylorus.

The patient had a hernia, and the signs of peritonitis, produced by the escape of the contents of the duodenum through the ulcer, so nearly coincided with an apparent increase of the protrusion, that it was supposed the hernia had become strangulated. Previous to the perforation of the intestine the patient had been subject to dyspepsia. He died about fourteen hours after the commencement of the peritonitis. Case-Book, Vol. i. p. 165, No. 189.

68. Portion of a Rectum. At a distance of about three inches from the anus, the greater part of the circumference of the intestine is occupied by a firm medullary tumour, growing from beneath its mucous membrane. The mucous membrane is healthy. The tissues around that part of the rectum which is occupied by the morbid structure, are thickened and condensed. Some

lymphatic glands behind the rectum are enlarged, and filled by a substance similar to that of which the tumour is composed.

The patient was a woman forty years old. She died extremely emaciated, with medullary tumours in the liver and other parts. She had made no complaint leading to a suspicion of disease of the rectum. *Case-Book*, Vol. i. p. 170, No. 194.

69. A Rectum exhibiting the effects of long continued inflammation in its coats and in the tissues around them. The whole of the mucous membrane, for about nine inches above the anus, is removed, an irregular shreddy surface being exposed. On this surface there are several apertures which lead to fistulous passages in the diseased tissues. Upon the anterior aspect of the rectum there is one aperture higher up than the rest which passes through the walls of the rectum, and which opened directly into the peritoneal cavity. Through this aperture a portion of glass is passed. All the tissues around the rectum are greatly thickened and indurated.

The patient, a middle-aged woman, had long suffered with symptoms of disease of the rectum, when peritonitis was excited by the formation of the aperture above described, and speedily proved fatal. The first sign of peritonitis occurred during the act of defecation.

70. A Cæcum, with parts of the ascending Colon and of the abdominal wall from the right inguinal region. The portion of glass marks the track of a large abscess, which at one extremity communicated by two apertures with the intestine, and at the other end opened by extensive sloughing through the groin and scrotum. The edges of the apertures in the intestine are soft and shreddy: the parts adjacent to them are not thicker or harder than usual: but near the uppermost of them is a circular spot, in which the coats of the intestines are thin and soft; at this part the mucous membrane only remains: its inner surface is smooth and polished.

The patient was a man thirty-eight years old. The history of the case, as well as the appearances here shown, make it probable that there was first an abscess in the iliac fossa, which, opening into the cæcum, permitted the escape of feces, and the consequent sloughing of the tissue extending from the iliac fossa through the groin into the scrotum. *Case-Book*, Vol. i. p. 174, No. 198.

71. Portion of a Colon, in which a large superficial ulcer has nearly

cicatrized. The healed surface is contracted and irregularly wrinkled; and there are several small oval apertures in it, which have smooth margins and edges.

From a patient fifty years old, in whose lungs there were several masses of calcareous substance, and dry grey tubercles, but who died of a disease independent of the condition of both the lungs and the intestines. Part of the lung is preserved in Series XIV. No. 41.

72. Portions of a Rectum and Urinary Bladder, between which a wide communication is indicated by a piece of glass. The surface of the rectum, about eight inches from the anus, is extensively and deeply ulcerated; and at one part the ulceration has spread through the thickened and indurated tissue connecting the bladder and rectum so as to form the communication just mentioned. The mucous membrane around the orifice in the bladder is thickened and covered by soft lymph.

From a man, aged eighty-five, who died with asthma. He had not complained of any affection of the rectum or bladder till a week before his death, when he first noticed that air occasionally passed through the urethra. During the last week of his life, both air and feces passed with his urine; the latter chiefly in small masses about as large as peas.

Presented by Henry James, Esq.

73. The sigmoid flexure of a Colon, into the cavity of which an abscess opened from without. The abscess was seated in the cellular tissue connecting the outer part of the intestine with the wall of the abdomen, and a part of its cavity, which is very irregular in form, is shown at the back of the preparation. Portions of whalebone are passed through two short fistulous canals by which the abscess opened into the intestine. The apertures through the mucous membrane are oval and regular: their borders are sharp and even: and there is no thickening or other morbid change in the adjacent coats of the intestine.

The disease was not observed during the life of the patient, who was a man about thirty years old, and died of pulmonary phthisis. The rest of the intestinal canal was healthy.

74. Portion of a Colon, from a patient who died with dysentery at the General Penitentiary, Millbank. Its mucous membrane is generally thickened and indurated: and there are numerous small, but deep, oval ulcers in it, with sharply circumscribed

borders, which extend down to the muscular coat, and in many instances lead to more widely spread ulceration in the sub-mucous tissue. The muscular and peritoneal coats appear healthy.

75. The last eight inches of an Ileum, in which there are several large circumscribed ulcers of the mucous membrane. The ulcers are nearly circular, and from a quarter to three quarters of an inch in diameter: some have coalesced and formed large and less regular ulcers. The bases of the ulcers are smooth and level, and are formed by the circular muscular fibres of the intestine, which appear healthy; their borders are bounded, and to a small extent overlapped, by the adjacent mucous membrane, which, except in being rather thickened, appears to have preserved its natural texture.

It is probable, as well from the history of the case as from the characters of the specimen, that these ulcers were formed in the separation of sloughs of Peyer's glands, in the course of typhus fever, and were in progress of healing.

76. Portion of a Jejunum, in which a tuberculous ulcer has completely perforated the coats, making an aperture nearly half an inch in diameter at the bottom of an ulcer of rather wider extent in the mucous membrane. At the upper part of the intestine there is another ulcer, which has at one part proceeded through the muscular, as well as the mucous, coat. The peritoneal coat of the intestine is thinly covered by soft lymph.
77. Portion of an Ileum, in which the mucous membrane is swollen and soft, and in the recent state appeared succulent, as if infiltrated with serous fluid. The patches of Peyer's glands and the solitary glands are enlarged and prominent above the surface of the mucous membrane.
78. The lower portion of the Ileum, and part of the Cæcum, from the same patient as the preceding. The ileum exhibits the same state of disease in a more advanced degree, and its mucous membrane appears very superficially ulcerated. The cæcum is healthy.

The patient, a lad fourteen years old, was affected with diarrhœa during an attack of bronchitis, but appeared convalescent, when, four days before his death,

diarrhœa again ensued, attended by severe pain and tenderness of the abdomen, constant vomiting, and fever. Case-Book, Vol. i. p. 194, No. 214.

Presented by Dr. Baly.

79. Portion of an Ileum, from a case of typhus fever. Sloughs, including large portions of two patches of Peyer's glands, have been separated, and other portions, nearly detached, hang in loose shreds into the cavity of the intestine. The surface, exposed by the separation of the sloughs, is formed by the circular muscular fibres of the intestine, which appear healthy, and is surrounded by a thin overhanging border of apparently healthy mucous membrane. Several small ulcers, remaining after the complete separation of sloughs of the solitary glands, are situated between the two principal ulcers.

Presented by Dr. Hue.

80. Portion of a Colon, from a case of dysentery. Small portions of the surface of the mucous membrane, of various forms, are removed by ulceration. All the ulcers are situated on the free margins of the transverse folds of the mucous membrane, and by the sides of the lines formed by the longitudinal bands of muscular fibres. Their form is generally oval, or elongated in the direction of the transverse folds.

81. Another portion of the same Colon, from its lower part. By the extension of such ulcers as are shown in the preceding specimen, nearly the whole surface of the mucous membrane is removed. Portions of it remain hanging in shreds: and in some places the ulceration has extended to the muscular coat. The coats of the intestine were soft, easily torn, dark, and infiltrated with dirty-coloured fluid.

From a patient in the Penitentiary, at Millbank. The whole length of the colon was similarly diseased; the extent of the disease increasing from the upper to the lower part.

Presented by Dr. Baly.

82. Portion of a descending Colon, the canal of which is at one part suddenly reduced to a quarter of an inch in diameter. Its walls at this part are slightly thickened and indurated, and a narrow band passes across its canal, dividing into two small apertures the orifice by which the portions above and below

the stricture communicate. The appearances are as if there had been an ulcer of the mucous membrane, the healing of which had been attended by contraction of the surrounding intestinal walls and adhesion of a part of its opposite surfaces. Both above and below the stricture the tissue of the colon appeared healthy: but its canal below was very small, while above it was enormously distended with fæces, and burst about two inches from the stricture.

The patient was a lady about thirty years old. She had been for three years subject to occasional attacks of obstinate constipation, which were generally followed by diarrhœa. Four months before her death, the obstruction of the intestines became complete, and after this time she had no fæcal evacuation. The cause of obstruction was found to be a cherry-stone which had lodged above the stricture in the colon, and completely closed the canal.

Presented by Thomas Wormald, Esq.

83. A Cæcum, with part of the Colon. There is a round ulcerated aperture through that wall of the cæcum which was connected with the iliac fossa. On the exterior of the wall the margins of the aperture are uneven and ragged; on its interior they are smooth and clean. The portion of tissue which is attached to the exterior of the cæcum around the aperture was part of the wall of a large abscess. The rest of the mucous membrane and the other coats of the cæcum are healthy.

The patient, an elderly man, had undergone the operation of lithotomy a week before death. Suppuration by the sides of the bladder and rectum, and all round the cavity of the pelvis, followed; and, extending into the iliac fossa under the pelvic fascia, some of the pus discharged itself through the fascia into the cæcum a short time before death.

84. Portion of an Ileum, the cavity of which is distended by an oval biliary calculus, two inches and a half in length and an inch and a half in diameter. The peritoneal coat of the distended part of the intestine is burst; and the other coats are thin and tense.

The patient was a lady sixty-two years old, who had perfectly good health till within five days of her death, when she was affected by vomiting and constipation. These were relieved on the third day, but shortly recurred, and she died tympanitic with complete intestinal obstruction. The calculus here shown had passed through a large ulcerated opening from the gall-bladder into the ileum. The other large calculus which lies loose in the bottle had passed through another ulcerated aperture into the colon, and was found in the cæcum. *Casc-Book*, Vol. i. p. 191, No. 212.

Presented by John Havers, Esq.

85. Portion of small Intestine, the peritoneal coat of which is occupied by numerous close-set groups of firm, flat, white medullary tumours. They form an uneven nodulated layer, from one to two lines in thickness. The other coats of the intestine appear healthy.

86. Portions of Stomach, Colon, and Great Omentum, from the same patient as the preceding specimen. The peritoneal coats of the stomach and colon are occupied by a similar layer of medullary substance; and in the place of the omentum is a narrow mass, an inch thick, of hard substance coarsely striated, like a congeries of small, firm, medullary tumours.

The patient was a woman forty-four years old. She had abdominal pain for six months, and ascites for seven weeks, before death. Paracentesis of the abdomen was performed four times; and on the first occasion the fluid drawn from the abdominal cavity coagulated spontaneously. The case is recorded by Dr. Ormerod, in the *Lancet*, May 2, 1846, p. 504.

87. The lower portion of an Ileum, with part of a Colon, from a patient who died in an early stage of typhus fever. Patches of Peyer's glands at the end of the ileum, and many of the solitary glands in the colon, are much enlarged, soft, and prominent above the surrounding surface of the mucous membrane; but there is scarcely any appearance of ulceration or sloughing. The mesenteric glands also are enlarged and soft.

88. Portion of an Ileum from a more advanced case of typhus fever. Three patches of Peyer's glands are enlarged, and small portions have separated by sloughing from their centres. There is also a general enlargement of the solitary glands, which project like little conical papulæ from the surface of the mucous membrane.

89. Portion of a Colon, in which there are several small ulcers of the mucous membrane, remaining after the separation of sloughs in a case of typhus fever. The bases of the ulcers are formed by the circular muscular fibres of the intestine, which appears healthy; their margins are formed by thin portions of mucous membrane overhanging their bases. The intervening mucous membrane and other tissues appear healthy.

90. Portion of an Ileum, in which two small ulcers, like those last described, have nearly healed. The muscular coat cannot be seen at their bases; and their margins, which probably were overhanging but have united to their bases, are smooth and shelving.
91. Another portion of the same Ileum, in which are several similarly healed small ulcers, and one of larger size in which a further process of ulceration has extended from the middle of the base of the ulcer in the mucous membrane, through the muscular and peritoneal coats, forming an elongated oval opening by which the intestine communicated with the cavity of the abdomen.

The five preceding specimens were taken from patients who died with typhus fever at Vienna.

Presented by Charles Moore, Esq.

92. Portion of an Omentum, in which, by the adhesion of two adjacent points of its surface, an aperture or ring is formed, through which the finger might be passed.
93. The Rectum, Uterus, and Vagina of a child five years old. Ten months before the death of the child, in the endeavour to administer an enema, a clyster-pipe was forced through the adjacent walls of the rectum and vagina. At the part thus injured there is a small depression in the wall of the vagina, and a long, pale, and irregular cicatrix in that of the rectum. Near this cicatrix, also, there are traces of small healed ulcers of the mucous membrane of the rectum. Just below the cicatrix, at a distance of about an inch from the margin of the anus, the canal of the rectum is reduced to an eighth of an inch in diameter, and the adjacent tissues are indurated. Above this stricture the intestine is greatly dilated; below, it is of natural size.
94. The Large Intestine of the same child, enormously distended. It contained a large bucket-full of fluid faecal matter, which had been gradually accumulating from the time of the formation of the stricture in the rectum.

Presented, with the preceding specimen, by Thomas Wormald, Esq.

SERIES XVII.

HERNIA, INTUSSUSCEPTION, AND OTHER DISPLACEMENTS OF THE INTESTINES AND OMENTUM.

Anatomy of Hernia in general, including the illustrations of

The Sac; its form, structure, relations, &c.

Sacs of ordinary form, &c., 3, 4, 5, 11, 14, 29, 48.

of unusual form or arrangement, 6, 24, 31, 37, 52, 57, 81, 88.

thickened, or otherwise changed in structure, 8, 47, 88, 28, 27, 35, 33, 46, 58, 25.

closed, 9, 10, 6?

Complications with hydrocele and other diseases, 3, 12, 15, 39, 50.

Reduction of the sac with its contents, 56, 68.

The Contents of the sac.

Adhesions and unusual arrangements, 13, 39, 50, 65.

Thickening, &c. 49, 59, 86.

Effects of stricture, 11, 56, 77, 42, 89, 16, 17, 18, 43, 44, 58, 73, 80, 85.

The operation, 25, 26, 27, 40, 73, 56, 68.

The effects of trusses, 9, 10.

Anatomy of particular forms of Hernia.

Inguinal Hernia.

Its ordinary characters, in the several varieties of

Congenital, 7, 8, 37, 38, 81.

Oblique, 3, 4, 5, 14, 24, 29, 31, 45, 47, 71.

Direct, 29, 30, 31.

Incomplete, 2, 11, 33.

Various unusual states of the sac and its contents, 6, 12, 13, 24, 35, 37, 39, 40, 50, 56, 57, 65, 68, 76, 81, 88.

Complications.

With malposition of the testicle, 1, 2, 38, 54.

With unusual condition of the bloodvessels, 12, 14, 39, 83.

With hydrocele; see references above.

Femoral Hernia.

Its ordinary character, 48, 21, 22, 23, 26, 28, 31, 66, 77.

Various unusual conditions of the sac and its contents, 25, 27, 41, 52, 58, 75.

With unusual conditions of the bloodvessels, 55, 69.

Umbilical hernia, 34, 46, 33, 82.

Ventral hernia, 36.

Obturator hernia, 84.

Diaphragmatic hernia, 70, 74.

Hernia of the cæcum, 12, 76.

„ sigmoid flexure of the colon, 32, 41.

Descent of the ovary and Fallopian tube into the labium, 78.

Intussusception, 60, 61, 62, 67, 72, 63, 64.

Internal strangulation, 2, 19, 20, 53, 79.

1. **INGUINAL Hernia.** The testicle has not passed through the inguinal ring; it was found within the canal, and is connected with the upper part of the hernial sac. The testicle is smaller than natural, but its structure is healthy. The lower part of the epididymis is removed from the body of the testicle, and passes down the posterior part of the hernial sac. The vas deferens also passes along the same part, and, becoming small and very tortuous, reaches nearly as far as the end of the epididymis just described. A loop of black silk is placed between these two portions of what may be regarded as an unravelled epididymis.

2. **Inguinal Hernia.** A portion of small intestine was found just behind the external inguinal ring, strangulated by a band of adhesion extending from the peritoneum near the ring, to the mesentery. The testicle is situated within the upper opening of the inguinal canal: it is smaller than natural, and a section of its interior has a granular aspect. The epididymis is not connected with the body of the testicle, but proceeds at once from its upper part, forms a short mass of fine convoluted tube behind the peritoneum, and then becoming gradually larger and less tortuous, assumes the ordinary characters of the vas deferens.

Both this and the preceding specimen are described by Mr. Lawrence, in his "Treatise on Ruptures." London, 1824, 8vo, p. 243.

3. **Inguinal Hernia, combined with Hydrocele of the tunica**

vaginalis testis, and a large membranous cyst, or Encysted Hydrocele, in the spermatic cord immediately above the testicle. The coverings of the hernial sac, which is situated above the hydroccles, are very thick.

4. Oblique Inguinal Hernia, the sac of which has just passed through the opening in the aponeurosis of the external oblique muscle. The several coverings of the sac are displayed, and its cavity is laid open from the side. A bristle is passed beneath the epigastric artery, where it passes on the inner margin of the internal ring.
5. Oblique Inguinal Hernia. Portions of the aponeurosis of the external oblique, and of the lower border of the internal oblique and transversalis muscles, are raised from their connexions, to show the passage of the hernial sac through the internal inguinal ring. The coverings of the sac are displayed, and its cavity is opened.
6. Inguinal Hernia. The sac, which is of large size, is divided into an anterior and a posterior portion by a membranous partition, in the upper part of which there are several small apertures. A quill is passed from the mouth of the sac across its anterior portion, and through one of the apertures in the partition into the posterior portion. Except by these apertures, the posterior division of the sac has no communication with the anterior, or with the cavity of the abdomen.

It is probable that that which is now the posterior division of the sac was at one time an ordinary hernial sac, the mouth of which was subsequently closed; that after this had occurred, another sac was protruded in front of the former one; and that the apertures of communication between them were formed by the gradual thinning and absorption of their adjacent walls.

7. Congenital Hernia, from an adult. The roll of paper is passed through the inguinal canal into the cavity of the tunica vaginalis testis, in the place formerly occupied by the protruded intestine.

Dissected by Percival Pott.

8. Congenital Hernia, from an adult, with general thickening of the sac.

9. The remains of an Inguinal Hernia, after the closure and obliteration of the mouth of the sac. The peritoneum presents a puckered appearance and a funnel-shaped depression in the situation where the mouth of the sac formerly existed.

The obliteration was the consequence of the long wearing of a truss.

10. A similar specimen, with the depression of the peritoneum more strongly marked.

11. Incomplete Inguinal Hernia, strangulated. The intestine is contained within the inguinal canal. The aponeurosis of the external oblique muscle is divided and turned upwards. The sac, containing the small portion of strangulated intestine, is opened from the front. The lower border of the internal oblique and transversalis muscles crosses over the neck of the sac. Two bristles are passed between the mouth of the sac, where the thickened peritoneum constitutes the stricture, and the strangulated intestine. Another bristle is passed beneath the epigastric vessels.

12. Inguinal Hernia combined with Hydrocele of the tunica vaginalis testis. The hernia is situated behind the enlarged tunica vaginalis, which is laid open anteriorly, and is flattened by the pressure of the hernia. The neck of the hernial sac is also opened from the front, and a portion of quill is introduced into it. The rest of the sac is opened posteriorly, and its contents, which are the cæcum and part of the colon, are there shown. The vessels of the spermatic cord are separated. The spermatic artery and the vas deferens pass together along the inner and posterior part of the sac, and the spermatic veins are at some distance external to them.

13. Inguinal Hernia. A portion of small intestine has become extensively and firmly united to the sac immediately below the external inguinal ring. The surface of the intestine is covered by recent lymph.

14. Inguinal Hernia, exhibiting the separation and displacement of the vessels of the Spermatic Cord in consequence of its pres-

sure. The spermatic artery and the vas deferens are situated close together on the inner and posterior part of the sac; the spermatic veins are nearly an inch distant from them. Large fasciculi of the cremaster muscle are interlaced over the front of the hernial sac.

15. Inguinal Hernia combined with Hydrocele of the tunica vaginalis testis. The hernial sac extends downwards to a short distance behind the upper part of the distended tunica vaginalis.
16. Portion of an Ileum which was strangulated in an umbilical hernia. In the situation of the stricture, the intestine is considerably contracted, and its coats have sloughed and given way in the greater part of its circumference.
17. Portion of a Jejunum which was strangulated in an umbilical hernia. In the situation of the stricture, the intestine is contracted; and immediately above it is a small round ulcerated aperture, into which a portion of glass is passed. Recent lymph is deposited on the peritoneum around this aperture.
18. Portion of Small Intestine which was strangulated in a femoral hernia. Its coats have sloughed and given way at that part of its circumference which lay nearest to Gimbernat's ligament.
19. Part of the Small Intestines of a Child strangulated by a band of adhesion, which is connected at both its extremities with the mesentery. Bristles are passed behind the band. The whole of the intestine below the constriction is strangulated, and its vessels are greatly congested. The mesenteric glands are swollen.

The child was seven years old. The obstruction had probably existed for fourteen days before death.
20. Portion of Small Intestine, exhibiting a contraction caused by a part of the omentum which, it appears, had become adherent to the wall of the intestine, had been drawn out into a firm cord, and, then, had been stretched across the adjacent portion of the canal.

21. Strangulated Femoral Hernia, from a male. The contents of the sac are omentum and intestine. The sac is separated from the fascia propria and partially opened. Gimbernat's ligament is in close contact with the inner side of the neck of the sac; and the epigastric artery is situated immediately above and to its outer side.
22. Femoral Hernia of recent occurrence. On the front of the preparation the fascia propria is shown, laid open from the front, and crossed above by the semilunar edge of the fascia lata. At the back, the hernial sac is separated from the fascia propria, withdrawn from beneath the crural arch, and inverted towards the abdominal cavity.
23. Femoral Hernia, of recent occurrence. The peritoneum, including the hernial sac, has been removed, to show that the fascia propria is formed by fibro-cellular tissue (the septum crurale) protruded beneath the crural arch, in the form of a pouch just below and on the inner side of the semilunar edge of the fascia lata.
24. Oblique Inguinal Hernia, from a female. The sac has enlarged within the inguinal canal, and has thence extended through the opening in the aponeurosis of the external oblique muscle, so that it presents a bilocular form, part of the sac being lodged within the inguinal canal, part in the labium, and the two parts being in communication by a narrow canal which lies within the external inguinal ring. The aponeurosis of the external oblique is reflected from the part of the sac which is in the inguinal canal, the neck of which part is crossed by the internal oblique and transversalis muscles.

Cast from the subject of this Hernia, No. 4.
25. Femoral Hernia, for the reduction of which the operation was performed. The sac has sloughed; its remains are soft and black. The incision of the stricture has been carried from the anterior part of the sac directly upwards. The obturator artery, arising with the epigastric by a common trunk nearly

half an inch long, descends on the outer side of the mouth of the sac.

26. Femoral Hernia, for the reduction of which the operation was performed. The coverings of the sac are displayed. The fascia superficialis is separated from the fascia propria. The fascia propria is also raised ; it is thick, and its internal surface is cellular. Within the fascia propria the remains of the sac are shown. The incision of the stricture has been made through Gimbernat's ligament obliquely upwards and inwards.
27. Femoral Hernia, for the reduction of which the operation was performed. The sac is collapsed and thickened. The incision of the stricture has been carried from the anterior part of the sac directly upwards. The epigastric vessels are situated about half an inch from the outer side of the mouth of the sac.
28. Femoral Hernia. The coverings of the sac are displayed by the separation of the fascia superficialis and fascia propria. Within the latter, the sac itself is shown, with lymph on its internal surface. The mouth of the sac is about a quarter of an inch in diameter. The epigastric vessels are situated three quarters of an inch from the outer border of the mouth of the sac.
29. Two Inguinal Herniæ, one direct, the other oblique. On the right side, the hernia is oblique and has descended into the scrotum. The epigastric artery is close to the inner margin of the mouth of its sac, and the spermatic cord is behind the sac. On the left side, the hernia is direct, having passed from the abdomen directly through the external inguinal ring. The epigastric artery is near the outer margin of the mouth of its sac ; and the spermatic cord is between the sac and the outer column of the external ring. The sac of this hernia is withdrawn from the covering of the fascia transversalis, which was protruded before it, and is inverted towards the abdominal cavity.
30. Direct Inguinal Hernia, incompletely protruded through the external inguinal ring. The spermatic cord is on the outer

side of the sac; the fascia transversalis is protruded before it; and immediately below the mouth of the sac, the peritoneum lining the abdominal muscles is dilated into a wide pouch.

31. Four Herniæ, an inguinal and a femoral on each side. The spermatic cords are situated on the outer side of each inguinal hernia. The fascia transversalis, protruded before the right inguinal hernia, is divided and in part separated from the sac.
32. Large Inguinal Hernia. A portion of the sigmoid flexure of the colon, displaced from its natural situation by the dragging of the peritoneum into the hernial sac, is situated close by the mouth of the sac.
33. Part of a large Umbilical Hernia, the sac of which presents many irregular pouches and appears in some parts deficient.
34. Portion of the Abdominal Muscles, exhibiting a large circular opening in the linea alba through which an umbilical hernia was protruded.
35. Oblique Inguinal Hernia. The sac and its coverings are thickened, indurated, and consolidated by inflammation; and its internal surface is made rough by the deposit of lymph upon it.
36. Two Herniæ in the Linea Alba, above the umbilicus. The superior and larger sac contains omentum: the lower one is empty. Below the smaller sac is a hole in the linea alba, through which fat protrudes.
37. Very large Congenital Hernia. Its sac is divided, as if by a deep constriction from below upwards, into two portions, which communicate by a large oval aperture at the upper part. The anterior division of the sac is the larger; the posterior has the testicle at its inner and back part.
38. Congenital Hernia from an adult, for the removal of which the

operation was performed. The testicle and the hernial sac are situated within the inguinal canal. The upper border of the mouth of the sac was divided.

39. Inguinal Hernia, combined with Hydrocele. Several folds of intestine are firmly adherent to each other and to the hernial sac. The enlarged tunica vaginalis testis is situated in front of, and nearly envelopes, the sac of the hernia. Bristles are passed beneath the spermatic vessels, which are placed at some distance from each other behind the tunica vaginalis.
40. Inguinal Hernia, for the reduction of which the operation was performed. The sac, opened from the front, is thickened and inflamed. Between the peritoneum and the fascia transversalis, immediately above the mouth of the sac, there is a large space formed by the separation of the cellular tissue in the endeavour to reduce the hernia. A portion of the intestine which had been strangulated was pushed from the hernial sac into this space, and remained in it strangulated.
41. Femoral Hernia, of unusually large size. The contents of the sac are omentum, with part of the sigmoid flexure of the colon, and a portion of small intestine.
42. Portion of Small Intestine from an inguinal hernia, exhibiting the impression of the stricture upon its coats.
43. Portion of Small Intestine from a femoral hernia. Several openings have been formed in consequence of the sloughing of the part of the intestine which was inclosed in the stricture; and around these openings the coats of the intestine are very soft and readily separable.
44. Portion of Small Intestine from a femoral hernia, exhibiting the effects of strangulation. The intestine has been opened. Near its upper border the impression of the stricture is marked by the thickening and partial ulceration of its coats. The lower portion of the intestine, which was strangulated, is distinguished by its dark colour and pulpy texture.

45. Oblique Inguinal Hernia on the left side, showing the injected epigastric artery passing round the inner side of the mouth of the sac. The sac is laid open and separated from its immediate coverings. The obturator artery arises by a common trunk with the epigastric.
46. Section of an Umbilical Hernia containing omentum. The omentum is firmly adherent to the sac, except in one situation, where a part of the sac being deficient, the omentum is in contact with the skin.
47. The Sac of an Inguinal Hernia, slightly thickened and indurated.
48. Femoral Hernia, in the male, dissected so as to display the peculiar form of the tumour.
49. A large portion of Omentum, which was removed in an operation for strangulated inguinal hernia. Its tissue is generally indurated; and it exhibits numerous apertures bounded by blood-vessels, which form in some parts a kind of irregular network.

The patient completely recovered.
50. Inguinal Hernia combined with Hydrocele. The enlarged tunica vaginalis is situated in front of the hernia; the testicle is at its lower part. The hernial sac is large; it communicated with the abdomen by a wide orifice, and there is a portion of omentum adherent to its lower part. Between the hernial sac and the enlarged tunica vaginalis, is a small and distinct sac, which had no communication with the abdomen.
51. Femoral Hernia, for the reduction of which the operation was performed. Gimbernats ligament is divided horizontally close to the os pubis.
52. Femoral Hernia. A small peritoneal sac has been protruded between the fibres of Gimbernats ligament. A bristle is passed beneath the portion of the ligament which intervenes

between this peritoneal sac and the space through which the femoral hernia usually passes.

53. Portion of Small Intestine, from which a Diverticulum is continued. The extremity of the diverticulum is adherent to the contiguous part of the mesentery, so as to form a circular aperture, or ring. Through this aperture a portion of intestine twelve inches long passed and became strangulated.

The patient, a lad subject to constipation, died four days after the commencement of the signs of strangulation of the intestine. *Casc-Book*, Vol. i. p. 29, No. 65.

Presented by E. P. Pridham, Esq.

54. Congenital Hernia. The preparation consists of the testicles of an adult, in whom they had remained within the inguinal canal. Both the glands are much smaller than natural, and with one of them a peritoneal sac is connected.
55. Two Femoral Herniæ, in the male, exhibiting different relations of the obturator artery to the mouth of the hernial sac. Both the obturator arteries arise by common trunks with the epigastric arteries. On the right side, the obturator artery descends to the obturator foramen close to the outer margin of the mouth of the sac. On the left side, the obturator artery in its course to the obturator foramen turns round the inner border of the mouth of the sac. On the right side, the common trunk of the two arteries is about a quarter of an inch long; on the left, it is about three quarters of an inch long.
56. Congenital Hernia, for the reduction of which the operation was performed. At the front of the preparation is a portion of the hernial sac, which extended from the inguinal ring into the scrotum, and within which some small intestine and the testicle are seen. At the back, is another portion of the sac, which was found, after death, pushed back and inverted into the abdomen.

It is probable that before the operation a portion of the hernial sac had been pushed backwards into the abdomen, and that in the operation, the strangulated intestine was pushed from the lower part of the hernial sac, which still remained external to the abdomen, into that part of it which was within the abdomen.

57. Inguinal Hernia. There are two distinct hernial sacs side by side and closely united by their intermediate walls. Each sac has its separate orifice of communication with the abdomen; but the orifice of one is very small. The spermatic cord is behind both the hernial sacs.
58. Femoral Hernia, in the male. The hernial sac and its contents have sloughed; their remains are a pulpy mass, in which no distinction of parts can be recognized. Three portions of small intestine were protruded into the hernial sac. A portion of straw is passed into each of their orifices.
59. A large portion of Omentum, which was removed in the operation upon an inguinal hernia. It is in many parts thickened and indurated.
60. Intussusception of the small intestine of a child. The lower portion of the intestine is laid open, and the inverted upper portion is shown ensheathed in it.
61. Intussusception of a large portion of the Ileum, and of the Appendix Cæci, within the Cæcum and ascending Colon. There is a diverticulum ilei which has passed into the colon with the intussuscepted ileum, but has become everted, and has passed back again into the ileum; thus producing a double intussusception, of the ileum within the colon, and of the diverticulum within the ileum. At the upper part of the preparation is the cæcum with the commencement of the intussusception, and the inverted diverticulum ilei; at the lower part, is the whole of the intussuscepted ileum, which was of a dark brown colour, its vessels being distended with blood.
- The patient was a man thirty-six years old, who for six months before his death had often suffered pain in his abdomen. He died with peritonitis and obstruction of the intestines. Case-Book, Vol. i. p. 24, No. 53.
62. Intussusception, in which a considerable portion of the Ileum with the Cæcum and its Appendix, have been inverted into the cavity of the ascending colon.

63. Portion of Small Intestine, nearly three feet long, which was discharged in a gangrenous state from the anus.
64. The Cæcum, and a portion of the Ileum connected with it, from the same person as the preceding specimen. The cæcum is opened to show the condition of its mucous membrane, which is extensively ulcerated, and portions of which hang in shreds in the cavity of the intestine. A straw is passed from the cæcum through the ileo-cæcal valve. The ileum is opened to show the adhesion of its extremity to the cæcum, and the continuity of their mucous membrane.

The patient was a woman forty-eight years old, subject to constipation. Seventeen days before the discharge of the portion of intestine in No. 63, she was seized with signs of internal strangulation of the intestinal canal, which continued for six days, and then became less. Subsequent to the discharge of the intestine, which took place eleven days after the partial cessation of the intestinal obstruction, the patient had fecal evacuations, but she died exhausted ten days after the discharge.

It is probable that there had been an intussusception of the ileum into the cæcum and colon; and that the ensheathed portion had sloughed off after it had become adherent at the point of inversion to the portion in which it was ensheathed. Case-Book, Vol. i. p. 35, No. 71.

Presented by William Radnor, Esq.

65. Inguinal Hernia. A portion of omentum has become adherent to the inside of the sac, in two situations, so as to form an aperture or ring, through which the intestine was protruded. A portion of glass is passed through the mouth of the sac and the ring formed by the omentum and the wall of the sac.
66. Femoral Hernia, with mortified intestine. The fascia superficialis is separated from the fascia propria, showing the smooth external surface of the latter. The fascia propria and subjacent fat are closely united to the hernial sac. The mortified intestine, of a white colour and with lymph deposited on it, is in the centre of the sac. The upper and lower portions of intestine leading to the strangulated part are laid open: the upper portion is distinguishable by the thickness of its coats and the dilatation of its canal.
67. Intussusception. The cæcum and right lumbar portion of the colon, are inverted and protruded into the arch of the colon,

which is laid open to show the intussuscepted intestine projecting into its cavity. A piece of glass is introduced into the orifice of the intussuscepted intestine, which in some degree retains the dark colour it presented in the recent state.

From a child two years old, who died after a few days' illness, in consequence of the obstruction in the alimentary canal.

Presented by William Radnor, Esq.

68. Inguinal Hernia, for the reduction of which an operation was performed a short time before death. On one side of the preparation there is a portion of the spermatic cord, and, a little above it, is an opening, which, in the operation, was made into the inguinal canal. On the other side of the preparation is the hernial sac, extending downwards into the pelvis, by the side of the urinary bladder to which it is attached. In the upper part of this sac, is a circular orifice; this was the mouth of the sac, through which the intestine passed from the cavity of the abdomen. The other and larger opening in the sac was made in the examination of the parts after death.

It is probable that the hernial sac which now appears extending downwards into the pelvis had originally been situated in the scrotum, and that, in the efforts to reduce the hernia, previous to the operation, both the sac and its contents had been pushed into the cavity of the abdomen. The intestine in the sac was found mortified from the tightness of the stricture, which was formed entirely by the peritoneum at the mouth of the sac; and it will be observed that, by the displacement of the sac, its mouth had become situated deep in the abdomen, at a great distance from the internal inguinal ring.

69. Portion of a male Pelvis, with parts of the abdominal muscles, exhibiting the sacs of two femoral herniæ. On each side, the obturator artery, arising with the epigastric by a common trunk about half an inch long, turns round the inner border of the sac; while the obturator vein, arising separately from the epigastric, passes round the outer border.
70. Diaphragmatic Hernia. The preparation exhibits a portion of the left lateral half of the diaphragm, in which there is a large oval opening, presumed to have existed from birth. Through this opening, parts of the arch of the colon, omentum, and pancreas protruded into the chest. The strangulation of the

intestine by the margin of the opening was the cause of death.

The patient, a lad nineteen years old, died with complete obstruction of the intestines of three days' duration. Case-Book, Vol. i. p. 47, No. 87.

Presented by Dr. Norris.

71. Oblique Inguinal Hernia, dissected to show the change in the relative position of the external and internal inguinal rings, in consequence of oblique hernia of long standing. In the front of the preparation, the aponeurosis of the external oblique and the external ring are shown; at the back, the pubic portion of the fascia transversalis, with its edge forming the internal boundary of the inner ring, which edge lies directly behind the middle of the opening of the external ring.

72. Intussusception from a Child. The cæcum and a portion of the ileum are inverted and protruded into the colon. Lymph is deposited on the protruded portion of the intestine, the effects of its inflammation.

The intussusception was fatal by its obstruction to the passage of the intestinal contents.

Presented by H. Bateman, Esq.

73. Portion of Small Intestine from the sac of a femoral hernia upon which an operation had been performed a few days before death. A considerable opening was found in the intestine, apparently from laceration of its coats, and its edges were drawn together by suture. Lymph is deposited upon the peritoneal surface of the intestine around the opening; and upon the mucous membrane, it is so abundantly deposited that the opening is completely closed by it.

74. Diaphragmatic Hernia, the consequence of a stab through the diaphragm six months before death. Through the aperture in the diaphragm a large portion of the jejunum and ileum, and a part of the arch of the colon, have been protruded.

The patient was a man thirty-one years old. He was always healthy till he stabbed himself below the left nipple. The wound was not considered dangerous; but after it he had several severe attacks of obstruction of the intestines, the last of which was fatal. Case-Book, Vol. i. p. 101, No. 130.

75. Femoral Hernia. In the peritoneum covering the femoral ring there are the orifices of two distinct hernial sacs close together. The outermost of these sacs extends beneath the semilunar edge of the fascia lata, and over the femoral vessels. The inner sac is so small that it does not protrude behind Poupart's ligament.
76. Inguinal Hernia, in which the cæcum has protruded into the scrotum, carrying with it a partial peritoneal sac. The intestine is fixed to the outer side of the sac by its natural peritoneal connexions.
77. Strangulated Femoral Hernia, upon which no operation was performed. The sac and its coverings are in great part removed. The portion of small intestine contained in the sac presents a black and mottled appearance, from the intense congestion of its vessels. The small calibre of the intestine below the strangulated part is strongly marked.
78. Part of the Uterus, with the left Inguinal Canal and other adjacent parts, of a woman on whom an operation was performed for what was supposed to be a strangulated hernia. Below and in front of the inguinal canal, at the upper part of the left labium, a sac, like that of a large tunica vaginalis testis, and having no communication with the abdomen, is laid open. This sac was filled with fluid; and the left ovary and the extremity of the Fallopian tube are fixed to its posterior wall, with portions of the lining membrane of the sac reflected over them. A bristle is passed into the orifice of the Fallopian tube; the ovary is shrivelled.

The patient was a woman between thirty and forty years old. A fortnight after her delivery she had peritonitis, and gave such an account of the swelling produced by the sac in her groin, that it was supposed to be a hernia. The operation was performed, and she died three days afterwards.

The case may be regarded as one in which the ovary and Fallopian tube passed through the inguinal canal into the labium, in the same manner, and probably about the same time, as, in the male, the testicle and vas deferens pass into the scrotum; and in which, after such passage, the communication between the peritoneal pouch, carried with the ovary, and the general peritoneal cavity, was closed. Case-Book, Vol. i. p. 169, No. 193.

79. Portion of Small Intestine, with a part of the Great Omentum. The omentum is adherent to a fold of the intestine, and has become twisted around it so as to produce complete strangulation. The other end of the omentum was adherent to the femoral ring.

The patient, a middle-aged woman, had no discharge from the bowels for the last seven days of her life.

80. Portion of Small Intestine which was strangulated in the sac of a femoral hernia. On one side it exhibits but a slight indentation from the stricture; on its other side, which corresponded with Gimbernat's ligament, there is a large aperture in it, and its coats are very thin.

81. Large Congenital Hernia. In consequence of the yielding of the tunica vaginalis at its lower part, the testicle is situated in the centre of the posterior wall of the sac.

82. Portion of the anterior wall of an Abdomen, exhibiting a large Umbilical Hernia. The hernial sac is divided, by deep constrictions, into three parts of unequal size. It is filled by omentum.

83. Parts of an Ileum and Os Pubis, with Poupart's Ligament, and a portion of the Abdominal Walls including the Inguinal Canal. The external iliac artery and its branches are injected. The epigastric and obturator arteries arise by a common trunk half an inch long. A small branch arising from the epigastric, about a quarter of an inch from its origin, passes across the external ring.

This branch was wounded in an operation for strangulated hernia in an elderly man; profuse hemorrhage, which commenced five hours after the operation, was the result; and the patient died with peritonitis. Case-Book, Vol. i. p. 168, No. 192.

84. Portion of the front and right side of a Pelvis, exhibiting the sac of a small hernia through the obturator foramen. The sac is protruded above the upper edge of the obturator externus muscle, and below the obturator nerve. The vas deferens runs round the upper and outer border of the neck of the sac.

From a young man who died with pulmonary phthisis.

85. A portion of Jejunum, of which a part of the circumference was strangulated in one of the crural canals. The strangulated portion has been drawn out like a short diverticulum from the rest of the intestine, and has a wide ulcerated aperture through its coats at the part which was nearest to Gimbernat's ligament.

86. A large portion of Omentum, partially indurated, which was cut off in an operation for strangulated inguinal hernia. The narrow portion by which it is suspended was attached to a protruded piece of large intestine; the rest was unattached.

The patient, an elderly woman, recovered after the operation, so that it is impossible to say under what circumstances so large a portion of omentum had become connected with the large intestine alone, and with it by only a narrow pedicle.

87. The Large Intestine of an infant. An intussusception of the upper part of the colon into its sigmoid flexure, and thence into the rectum, has proceeded till the appendix cæci has protruded at the anus. The stomach has been drawn, by means of its connexion with the transverse colon, into a vertical position; and if the intussusception had proceeded a little further, the pyloric end of the stomach would have been drawn into the rectum.

Presented by Henry Taynton, Esq.

88. The Sac of an Inguinal Hernia, presenting, about an inch below its mouth, an annular contraction produced by thickening and induration of a narrow portion of the peritoneum.

It is probable that the thickened part of the sac had been its mouth, and had been enclosed within one of the rings, the pressure of which had produced the thickening; and that, by a larger protrusion of intestine, the mouth of the sac had been pushed outwards. The thickened part of the sac formed the stricture by which the intestine was strangulated.

89. Section of a portion of Small Intestine, which was strangulated in a femoral hernia, to show the sharp-edged fold of mucous membrane which projects into the canal of the strangulated portion, from the angle formed by the portions above and below it.

SERIES XVIII.

INJURIES AND DISEASES OF THE LIVER.

Injuries by violence, 1, 25.

Fatty degeneration, 22.

Effects of inflammation.

Thickening and adhesion of the peritoneal coat, 3, 5, 7, 30, 34.

Abscess, 9, 34.

Induration and contraction (Cirrhosis), 15, 20, 32.

Tumours and other allied morbid deposits.

Medullary cancer, 6, 12, 13, 14, 16 ? 17, 18, 19, 28, 10.

Melanotic, 11, 23, 26, 27, 29.

Tubercle, 21.

Hydatids, 2, 8, 33, 3, 4, 30, 24.

1. PORTION of the Liver of a child, deeply and extensively lacerated by a blow upon the abdomen.
2. Portion of a Liver, in which is a Cyst containing Acephalocyst Hydatids of various sizes. The structure of the liver appears healthy; but its fibrous and peritoneal coats are thickened where the cyst is in contact with them.
3. Portion of a Liver, with an Hydatid Cyst half imbedded in it and half projecting from its surface. The acephalocyst hydatids are nearly all broken and collapsed: the walls of the cyst

containing their remains are tough and laminated. The structure of the liver presents the appearances of fatty degeneration.

4. Portion of a Liver containing a Cyst like those last described, and of tough, nearly cartilaginous, texture. Within this cyst there was a second cyst, formed in part of membrane like that of a common acephalocyst hydatid, and in part of a much thicker and more opaque substance. This inner cyst has broken into two portions, one of which is suspended, and the other lies loose; the internal surface of the thickest part is covered with nodules of fatty matter.

5. Portion of a Liver enveloped by a thick layer of substance resembling cartilage, which is but slightly adherent to its surface, and probably consists of the thickened and indurated peritoneal coat. The surface of the liver, exposed by the reflection of a portion of the layer, appears healthy and smoothly covered by its fibrous coat.

6. Section of a Liver, in which is a large spherical mass of soft, brown, medullary substance.

From the same person as No. 40 in Series XXVIII. and No. 5 in Series XVI.

7. Portion of a Liver, with long, slender, cord-like adhesions between its peritoneal covering and that of the diaphragm.

8. A large Cyst, containing Acephalocyst Hydatids, which was attached to the Liver. The walls of the cyst are thin, tough, and laminated; its inner surface is uneven, pulpy, and shreddy, with copious deposits of lymph upon it.

9. Portion of a Liver, exhibiting a small Abscess near its surface. The boundary of the abscess is formed by the irregularly broken substance of the liver.

10. Section of a Liver, exhibiting deposits of coagula and medullary substance completely filling the trunk and many of the large

branches of the portal vein. There are similar medullary deposits in the substance of the liver.

Nearly all the branches of the portal vein were similarly filled; and the gall-bladder contained a medullary growth preserved in the next Series, No. 4. Case-Book, Vol. i. p. 27, No. 60.

11. Section of a Liver, in which there are several round masses of medullary and melanotic substance. Some of the masses are pale, and hardly distinguishable from the substance of the liver; others are completely black, soft, pulpy, and shreddy.

From a man who died with a very large medullary and melanotic tumour in the axilla, and whose case is described by Mr. Langstaff, in the *Medico-Chirurgical Transactions*, Vol. iii. p. 277. London, 1812. Nos. 15 and 24 in Series XVI. are from the same patient.

12. Section of a Liver, in which there are several large masses of soft, brown, medullary substance.
13. Section of a Liver, in which soft medullary substance appears extensively diffused through its tissue. The intervening parts of the liver are healthy. The limits of the healthy and diseased structure are shown by the injection, which has penetrated only the healthy substance.
14. Section of a Liver, with soft medullary substance in tumours more circumscribed than the deposits in the preceding specimen.
15. Section of a Liver, the whole substance of which is indurated and pale, as if lymph had been deposited and organized between its lobules. Its external surface is tuberculated and nodular; and a similar nodular appearance is shown on the surface of its section. It is an example of what has been termed *Cirrhosis*, or *Hobnailed Liver*.
16. Section of a Liver, exhibiting numerous small deposits of white substance throughout its tissue.
17. Section of a Liver, with numerous deposits of soft medullary substance, some of which are diffused, others circumscribed.

18. Section of a Liver, in which there are several large round masses of white, probably medullary, substance. The intervening substance of the liver is healthy.
19. A similar specimen, except that the masses of morbid substance are smaller and more numerous.
20. Section of a Liver, presenting the character of Cirrhosis, in a less degree than No. 15.
21. Section of a Liver, in which very minute distinct deposits of yellow and firm, probably tuberculous, substance are thickly scattered.
22. Section of a Liver, the tissue of which appears soft, and exhibits interstitial deposits of pale, probably fatty, matter.
23. Sections of a Liver, in which there are numerous medullary tumours, most of which are blackened by melanotic matter deposited in spots or diffused through every part of them.
From the same patient as the specimen of melanosis of the eye; Series IX. No. 7.
24. Portion of a Liver, with a Cyst which contained bile imbedded in it. The walls of the cyst are of a cartilaginous texture, and it closely resembles those formed round acephalocyst hydatids. The surrounding tissue of the organ is healthy.
25. Portion of a Liver, the anterior border of which was punctured by a trocar. On the convex surface of the liver the wound is completely closed by coagulable lymph: on the concave surface it is still partially open, and presents uneven, as if torn, edges.
The wound was made a fortnight before death in puncturing the cyst connected with the pelvis of the kidney, which is preserved in Series XXVI. No. 14. No ill consequences were apparent.
26. Section of a Liver, in which there are numerous masses of medullary and melanotic substance.
There were similar deposits in the heart, lungs, and many other parts.

27. Section of a Liver, in which there are several medullary tumours, variously streaked and spotted with melanotic matter.
28. Section of a Liver, nearly the whole substance of which is occupied by large medullary tumours. The injection was impelled into the portal vein, and has in some parts freely entered the vessels of medullary substance.

The two preceding specimens were prepared and presented by Francis Kiernan, Esq.

29. Section of a Liver, exhibiting numerous round and oval medullary and melanotic tumours of various sizes. The vessels of the liver were injected through the portal vein; and the injection has passed freely into many of the tumours.

Presented by Richard Partridge, Esq.

30. Portion of a Liver, in which there is a solid spherical mass, partly imbedded in its substance, and partly projecting from its surface. The circumference of this mass is apparently formed by a distinct cyst; the central solid part consists of a mixture of a substance like cartilage arranged in concentric layers and of a soft putty-like substance. A portion of the great omentum adheres to the surface of the tumour and of the contiguous part of the liver.

It is probable that the cyst had contained accephalocyst hydatids, the membranes of which, after being ruptured, were compressed and changed into the substance which now fills the contracted cyst.

31. Section of a Horse's Liver, dried. Its substance is nearly filled by deposits, in granules and minute nodules, of a substance consisting principally of carbonate and phosphate of lime, with animal matter.

The lungs were similarly disected.

32. Section of a Liver, the surface of which is deeply lobed and nodulated by the contraction of its substance attendant on the changes constituting cirrhosis.

The liver was reduced to less than half its natural size, and was throughout similarly disected. A cast of it is preserved.

33. Portion of the Liver of a Cow, in which are numerous acephalocyst hydatids, contained in distinct cysts of various size and shape.
34. Portion of a Liver, in which a large circumscribed Abscess, situated near its convex surface, opened by an irregular orifice through the diaphragm and the adjacent portion of the adherent lung into one of the bronchial tubes. The surfaces of both the lung and the liver are covered by thick tough layers of false membrane.

Presented by Dr. Huc.

S E R I E S X I X .

INJURIES AND DISEASES OF THE GALL-BLADDER AND BILIARY DUCTS.

Rupture, 14.

Enlargement, 1, 2, 3, 5, 10, 11, 12.

Effects of inflammation, 8, 11 ; Series XVI. 84.

Obstruction.

By calculi and other foreign bodies, 1, 2, 9, 12.

disease of the walls, 5, 8.

tumours, 6, 13.

pressure from without, 3, 7.

Tumours.

Hard cancer, 3.

Medullary cancer, 4, 6, 13.

1. BILIARY Ducts enlarged and thickened in consequence of the lodgment of calculi in them. One of the calculi remains filling an hepatic duct near its entrance into the liver.
2. Portion of a Duodenum, with the Bile-ducts, dried. A biliary calculus of large size is impacted in the common duct, and one of smaller size in the cystic duct. All the ducts are dilated ; especially the common and hepatic ducts.
3. A Gall-Bladder and Ducts, with the adjacent Lymphatic Glands. The coats of the gall-bladder are much thickened, especially around its neck ; and their section displays a dense, greyish, semi-transparent substance, like hard cancer. At the ductus

cysticus the thickening has taken place to such an extent as to obliterate the canal. At this part, also, and around the neck of the gall-bladder, the lining membrane is thickened, rough, and tuberculated. At the base of the gall-bladder there is a small circular growth, composed of numerous close-set little processes upon narrow pedicles. The lymphatic glands around the biliary ducts are much enlarged and indurated, and had the appearance of glands affected by carcinomatous disease.

From a woman between thirty and forty years old, who had also carcinomatous disease of the ovaries, kidneys, and lumbar lymphatic glands.

4. A Gall-bladder, exhibiting a growth of soft medullary substance from its lining membrane. Except at the seat of this growth it appears healthy.

From the same man as No. 10 in the preceding Series.

5. A Gall-bladder, with the Bile-ducts. The cystic duct is obliterated, and its coats are nearly as hard as cartilage. The coats of the hepatic and common ducts are, in the greater part of their extent, a line in thickness and indurated. The gall-bladder is dilated; it contained a yellowish-white fluid.

From a woman forty years old. She had been deeply jaundiced for six weeks. The liver was very large and hard. Case-Book, Vol. i. p. 27, No. 61.

6. A Gall-bladder, with a large growth of soft medullary substance from the lining membrane of its neck.
7. A Duodenum, with the common bile-duct and the adjacent lymphatic glands. The duct is compressed and partly obliterated by a large cyst which contained hydatids. The lymphatic glands in the gastro-hepatic omentum are enlarged and hard.
8. A Gall-Bladder, of which, in consequence of the lodgment of a calculus within it, the coats are thickened and indurated. Its internal surface has lost its reticular structure, is rough, and at some points ulcerated. A piece of whalebone is passed into the cystic duct, which is very much contracted.
9. A Gall-bladder completely filled by a Calculus, which is firmly adherent to its internal surface. The cystic duct is pervious, and appears healthy.

10. Bile-ducts and Gall-bladder, with a portion of Duodenum. The hepatic and common ducts are much dilated and thickened, in consequence of the passage of calculi through them.
11. Portion of a Liver, with the Gall-Bladder, Biliary Ducts, and part of the Duodenum. The gall-bladder is thickened and contracted. A passage is formed by ulceration from the gall-bladder into the duodenum, through which passage a large calculus passed into the intestine. All the biliary ducts are much dilated. A portion of glass is passed from the common duct into the duodenum; but the communication of the cystic duct with the gall-bladder is obliterated.
12. Portion of a Duodenum, with a large *Acephalocyst Hydatid*, rolled up, and impacted in the common bile-duct, which it dilates, and from which a portion of it protrudes into the intestine.

The patient was a boy fourteen years old. Three months before death, he had signs of acute inflammation of the liver, and six days before death had acute pain in the right hypochondrium, followed by jaundice. He was relieved for a time, but the pain recurred with greater severity, and he died delirious.

There was a great cyst full of hydatids in the right lobe of the liver. Case-Book, Vol. i. p. 140, No. 164.

13. Portion of a Duodenum, with a small soft medullary tumour, surrounding and closing the orifice of the common bile-duct. The tumour appears to grow from the mucous membrane. The adjacent parts are healthy.

The patient, a woman twenty-seven years old, was intensely jaundiced for three months before death. For the last nine days of her life she had copious hemorrhage from the gums, nose, and intestines, and in the last two days discharged from the latter scarcely any thing but blood. She died comatose. The case is recorded by Dr. Ormerod, in the *Lancet*, 1846. Case-Book, Vol. I. No. 215.

14. A Gall-bladder, in which there is a rent about three-quarters of an inch long, extending through all its coats, close to its attachment to the liver.

From a man fifty years old, who was kicked near the region of the liver while stooping. He died in fifteen hours. The gall-bladder appears to have been distended in consequence of the lodgment of a small calculus in its neck. Case-Book, Vol. I. No. 216.

Presented by James Noble, Esq.

SERIES XX.

DISEASES OF THE PANCREAS.

Fatty degeneration, 3, 5.
Dilatation of the duct, 2.
Cancer.

Hard, 5.
Medullary, 1.
Melanotic, 4.

1. A PANCREAS, in the substance of which, and near its great end, there is a circumscribed tumour. A section of the tumour shows that it consists throughout of a yellowish substance, which in its recent state was soft and of a medullary character.

From a man aged forty. Similar tumours occupied the situation of the lymphatic glands in the neck, and elsewhere. There were also medullary deposits in the kidney.

2. A Pancreas, with the vertical portion of the Duodenum. The pancreatic duct near its greater end is dilated into a spherical sac of more than an inch in diameter. A portion of glass is passed from this sac through the rest of the duct, (which was obstructed by calcareous matter,) into the duodenum. The pancreas itself is diminished in size and less lobulated than natural. Its substance is hard and nearly homogeneous.

The patient was a very intemperate man, forty-eight years old. He had long suffered with dyspepsia, diarrhoea, and intestinal discharges of an oily fluid which,

on cooling, congealed into a substance like spermaceti. Near the end of his life, he became dropsical. He had tuberculous disease of the lungs, cirrhosis of the liver, an ulcer in the stomach, and tuberculous ulcers of the intestines. Case-Book, Vol. i. p. 172, No. 196.

3. Section of a Pancreas, enlarged to nine inches in length and between two and three inches in breadth. Its whole tissue appears to be converted into fat. The lobular appearance of the gland is preserved ; but nothing but fat-cells can be discerned in its structure.

From a middle-aged man, who was deemed in good health before he was attacked by typhus fever, of which he died in a few days.

4. Section of a Pancreas, in which are numerous round masses of medullary and melanotic substance. In many of them the morbid substance appears to be infiltrated in the tissue of the gland ; their cut surfaces present the same lobular arrangement as the surface of the gland itself.

From the same patient as the melanotic eye, in Series IX. No. 18.

5. Section of a Pancreas, the whole thickness of which near its larger end is occupied by an oval mass of hard cancerous substance, with a coarse fibrous texture. The portion of the organ between the tumour and the duodenum is healthy : the other portion is of small size, and appears degenerated into fat.

SERIES XXI.

DISEASES OF THE LYMPHATIC AND LACTEAL VESSELS AND GLANDS.

Enlargement, 4; Series XIX. 7.

Osteoid disease, Series I. 109, 110.

Cancer.

Hard, 2; Series XIX. 3.

Medullary, 1, 3; Series XIII. 103; Series XIV. 15, 17; Series XV. 3; Series XVI. 5, 68.

Melanotic, 5.

Tubercle, Series XIV. 16, 57; Series XVI. 41, 62, 66.

Earthy deposits, Series XIV. No. 14.

1. A TRACHEA, with the Arch of an Aorta, the Pulmonary Artery, and numerous Lymphatic Glands. The glands are enlarged, and the greater part of their natural texture appears to be occupied by a soft medullary substance, of which the natural pale colour is variously shaded by the black deposit in the glands. The diseased glands adhere closely to the trachea, and in some degree compress and project into it: the left recurrent nerve also is adherent to some of the glands, and appears compressed by them.
2. Sections of a Lymphatic Gland removed from the groin. It is enlarged to an inch and a half in length and nearly an inch in width. The whole of its natural texture appears to be re-

placed by a pale, obscurely fibrous, and very hard substance, which had all the obvious characters of the scirrhus, or hard cancer.

The patient, an adult, had no other appearance of cancerous disease.

3. A Larynx, by the side of which are several Lymphatic Glands greatly enlarged and filled by a morbid substance which, on the cut surface of one of the glands, hangs in fine shreds, like part of a medullary growth. There is also a small flat growth on the mucous membrane lining the interior of the fold between the epiglottis and the arytenoid cartilage, just beneath the diseased glands.

Presented by George Macilwain, Esq.

4. Clusters of enlarged and indurated Lymphatic Glands, removed from a child's neck, in which they formed a tumour extending from the ear to the clavicle, and from the edge of the trapezius muscle to the trachea. Parts of the accessory nerve and of some branches of the cervical nerves may be seen imbedded among the diseased glands.

The child was six years old. The enlargement of the glands was first observed fifteen months before their removal, but did not materially increase during the first year, and did not affect the child's general health. The glands were removed from beneath the sterno-mastoid muscle; portions of them lay also behind the internal jugular vein, and in contact with the pleura. The wound made in the operation healed; but the child did not recover from the debility which followed it, and shortly after died with disease of the lungs. The case is related by Mr. Vincent, in the *Medico-Chirurgical Transactions*, Vol. xii. p. 247. London, 1823.

5. Section of a cluster of Iliac Lymphatic Glands. One of them is much enlarged, and all trace of its natural structure is lost by the accumulation of medullary and melanotic substance in its interior. The melanotic substance is in but small quantity, and the medullary substance appears mottled by it with various shades of grey, brown, and black, in lines and dots. The centre of the mass is occupied by a small quantity of yellow substance. The other glands contain medullary matter, uncoloured by melanotic deposit.

From a man thirty years old, who died with numerous very large melanotic tumours in the liver. No other organs were affected; and the signs of diseased liver had been observed only three months.

SERIES XXII.

INJURIES AND DISEASES OF THE SPLEEN, THYMUS GLAND, THYROID GLAND, AND RENAL CAPSULES.

INJURIES AND DISEASES OF THE SPLEEN.

- Rupture, 5.
- Thickening and induration of the capsule, 1.
- Medullary cancer, 6.
- Tubercle, 2, 3, 7, 4.

DISEASES OF THE THYMUS GLAND.

- Enlargement, 8.

DISEASES OF THE THYROID GLAND.

- Simple enlargement, 10, 11, 14.
- Enlargement with formation of large cysts, 15, 16.
- “ “ deposits of earthy matter, 9, 12, 13.

DISEASES OF THE RENAL CAPSULES.

- Medullary cancer, 19.
 - Tubercle, 17, 18.
-

1. A SPLEEN, in the capsule of which there are several thick and irregularly nodulated masses of a substance resembling cartilage.
2. The Spleen of a child, in which there are numerous close-set tuberculous deposits. They have the form of miliary tubercles, and many of them are softened at their centres, or present a small central cavity consequent on the separation of the softened substance.

3. A similar specimen.
4. A Spleen, in which there are two large collections of, apparently, softened tuberculous matter. The substance of the spleen immediately surrounding them appears condensed, but the rest of it is healthy.
5. The Spleen of a child, deeply and extensively lacerated by a blow on the abdomen.
6. Sections of a Spleen, containing masses of soft medullary substance. The intervening tissue is healthy.
7. The Spleen of a child, with small tubercles thickly scattered through its substance.
8. The Thymus Gland of a child, enlarged and very firm, but of apparently healthy texture.

The child was twelve months old, and had well-marked thymic asthma. It died in convulsions. Its heart was enlarged, and the vessels of its brain much congested. The thymus gland weighed $328\frac{1}{2}$ grains; and measures three inches and three-quarters in length. Case-Book, Vol. i. No. 213.

Presented by Dr. West.
9. A Larynx and Trachea dried, with large round masses of earthy matter which were contained in a diseased thyroid gland.
10. Sections of a Thyroid Gland uniformly enlarged in all its parts, so as to form a simple bronchocele. The texture of the gland appears healthy, except in that it is coarser than that of glands of ordinary size, and that cysts of one or two lines in diameter and filled with viscid fluid are irregularly scattered in it. The enlarged gland completely surrounds and has somewhat compressed the trachea and the lower part of the larynx.
11. Section of a Thyroid Gland, enlarged like the preceding, but presenting more numerous cysts with viscid fluid, which cysts also appear in many instances partitioned. Its blood-vessels are minutely injected.

12. Portions of earthy matter, in the form of cysts, from a bronchocele.
13. A Thyroid Gland, of which one of the lobes is enlarged to three or four times its natural size. Portions of the enlarged lobe are indurated; and in these portions are many deposits of earthy matter. The other lobe and the isthmus of the gland are rather smaller than is natural.
14. A Thyroid Gland, greatly and almost uniformly enlarged in all its parts, but presenting no apparent morbid change of texture. A bristle is passed beneath two strong muscles (*Levatores glandulæ thyroideæ*) which extend from the body of the os hyoides downwards, to the inner part of each lateral lobe of the gland, and are attached to its surface. The superior thyroid arteries are of their ordinary size. The inferior thyroid arteries are enlarged; each of them is nearly equal in size to an external carotid. The trachea is compressed and flattened by the pressure of the lateral lobes of the enlarged gland.

The opening in the larynx between the thyroid and cricoid cartilages was made in the hope of relieving the dyspnœa under which the patient, a boy about fourteen years old, laboured. But it was unavailing; and he died suffocated.
15. The Thyroid Gland of an old man. Its right lobe is much enlarged, and exhibits in its interior several large cells or cysts, which contained a serous fluid. The walls of these cysts are formed by tough fibrous tissue, in which are several plates of earthy matter, like plates of bone; their interior is smooth and polished. The proper tissue of the gland is expanded around the cysts.
16. A Larynx, Pharynx, and adjacent parts, with the Thyroid Gland. The right lobe of the gland is enlarged by the formation of a cyst, of more than four inches in diameter, in its interior. The walls of this cyst appear to be formed by the distended tissue of the gland; its interior is rough, and has a large quantity of lymph deposited upon it, some of which hangs in it in loose shreds. At its upper part, the cavity of the cyst communicates with that of the pharynx by a narrow ulcerated

aperture (indicated by a piece of glass) near the arytenoid cartilage. The isthmus and left lobe of the gland are healthy.

The patient was an elderly woman, and the enlargement of the gland had long existed. The cyst at first contained a fluid like serum, which, when withdrawn, spontaneously coagulated. After being twice emptied the walls of the cyst inflamed, and it was rapidly filled with pus and lymph; its wall ulcerated, and the ulceration extending through the adjacent part of the pharynx, the patient was suffocated by the sudden discharge of its contents and the passage of some of them into the larynx.

17. A Renal Capsule, from an adult, enlarged, and containing a circumscribed deposit of a yellow and firm, probably tuberculous, substance.
18. A Renal Capsule, from an adult, enlarged, and with nearly all trace of its natural structure lost in the deposit of a pale yellow substance, like softened tubercle.
19. A Renal Capsule, in which nearly the whole of the natural texture is replaced by a mass of firm medullary substance.

The liver and other organs of the same patient were similarly diseased.

SERIES XXIII.

INJURIES AND DISEASES OF THE NOSE, MOUTH, TONGUE, PALATE, AND FAUCES.

INJURIES AND DISEASES OF THE NOSE.

Thickening of the mucous membranc, 23.

Ulceration, 21.

Gelatinous or mucous polypi, 7, 9, 10, 15, 24, 25.

Medullary tumours and polypi, 8, 13, 16.

Illustrations of the Rhino-plastic operation, 26.

INJURIES AND DISEASES OF THE TONGUE.

Injury by violence, 5.

Sloughing, 17.

Hard cancer, 11, 18.

Medullary cancer, 2, 3, 12, 19, 20, 27?

DISEASES OF THE TONSILS.

Enlargement, 4.

Ulceration, 1.

DISEASES OF THE GUMS AND HARD PALATE.

Fatty tumour? 22.

Fibrous growths, (Epulis), 6, 14.

DISEASES OF THE SOFT PALATE AND FAUCES.

Ulceration and sloughing, 17.

Medullary cancer, 2, 3.

1. A TONGUE, with the soft palate and its arches, exhibiting an enlargement of the right tonsil, with deep and ragged ulceration of its substance.

2. The Base of a Tongue, with parts of the fauces, pharynx, and larynx. Deep and extensive ulceration, which appears to have

succeeded the growth of a large medullary tumour, has destroyed the epiglottis, the folds connecting it with the arytenoid cartilages, the base of the tongue, and parts of the arches of the palate. The ulceration is bounded below by the superior vocal chords.

3. A Larynx, with part of the Fauces. A large growth of soft medullary substance, partially ulcerated, covers the base of the tongue, the soft palate, the tonsils, and the upper and posterior wall of the pharynx.

4. Portion of an enlarged Tonsil, which was removed by operation.

5. The anterior half of a Tongue, which was bitten off in an epileptic fit.

The patient recovered and retained the power of articulation.

6. An elongated oval Tumour removed from the palate, to which it appears to have been attached by a broad base. It is composed of a firm, very close-textured, obscurely fibrous substance, with interspersed specks of bone, like the epulis which more commonly grows from the gums.

7. Numerous Polypi removed from the Nose. They are of soft texture, semi-transparent or gelatinous in aspect, and several of them were attached to the mucous membrane of the nose by long narrow pedicles.

8. Part of the right side of a Face, in which the antrum and other nasal cavities and passages are completely filled by a soft medullary tumour, which also projects with an extensive sloughing surface through the skin of the cheek, and through the anterior part of the gum and of the hard palate.

9. Polypi removed from the Nose. They are of firm semi-transparent texture, and, with the one which is suspended, a large portion of the inferior spongy bone is connected.

10. Two Polypi, like those last described, attached by narrow pedicles to the inferior surface of the body of the sphenoid bone.

11. Sections of a Carcinomatous Tongue. The disease is situated in the base and centre of the tongue, and a hard tubercle projects on its upper surface. The diseased structure is very firm, irregularly intersected by white lines, and closely blended with the surrounding muscular substance. The left tonsil is ulcerated; and a bristle is passed through an artery distributed to it, from which a considerable hemorrhage occurred just before death.
12. A Tongue, the inferior part of which is on the right side completely destroyed by ulceration. Around the ulcerated surface, the muscular substance is indurated, but has undergone no other obvious change of structure.

The patient was a woman forty years old, who, till within four months of her death, when this disease was first observed, had had good health. Case-Book, Vol. i. p. 63, No. 108.
13. The Left side of a Face, with a soft Medullary Tumour filling the antrum, and thence extending into the nostrils, and into the cavities of the mouth and orbit. The parts of the tumour which are exposed are broken and flocculent, as if sloughing.

Presented by J. H. B. Williams, Esq.
14. A Tumour removed from the alveolar margin of a superior maxillary bone. It is of round form, and consists of a very firm substance, like fibro-cartilage, with specks of bone.
15. Sections of a Nose, exhibiting on each side large soft polypi, which are suspended from the mucous membrane covering the inferior and middle spongy bones. One polypus of smaller size is situated in the frontal sinus. They were probably of gelatinous aspect, though now, having collapsed and fluid having escaped from them, they appear opaque.
16. The right side of a Child's head, in which the nasal passages are completely filled by lobulated polypous growths from the mucous membrane. The section of one of the largest growths displays a pale, pinkish, and obscurely fibrous texture, firmer and less transparent than that of the common gelatinous polypi.

The growth of these polypi was very rapid. They proved fatal by suffocating

the child, for they filled the nasal passages and pressed down the soft palate so as to obstruct the fauces.

17. A Tongue and Pharynx, exhibiting extensive sloughing of their mucous membrane, which was considered to be the effect of mercury administered to a syphilitic patient.
18. A Larynx, with part of the Pharynx and Palate, and the remains of a Tongue. Nearly the whole of the tongue has been destroyed by cancerous ulceration. Its base and a small portion of the left side alone remain; and the ulceration which has exposed them has also spread in the tissues beneath the tongue, nearly as deep as the os hyoides. The tissues around the ulcerated parts are hardened, consolidated, and confused, and have cancerous matter infiltrated in them.
19. A Tongue, with the Larynx and other adjacent parts. A large medullary growth, formed in the base of the tongue, has been exposed by a section carried through the right side of the tongue from before backwards. Part of it has softened, and the centre of its surface has ulcerated, forming a large ulcer with elevated, sinuous, and everted margins. The larynx has been œdematous; its mucous membrane is wrinkled.
20. Section of the Tongue of a Cow, from the surface of which there are very large, deeply lobed, and warty growths, probably of medullary substance.
21. Portion of the Septum Nasi of a Horse, exhibiting pustules and ulcers of the pituitary membrane. Each separate ulcer is small and circular; but on the posterior part of each surface of the septum there is a large extent of ulceration of an irregular form, probably the result of the coalescence of many small ulcers with each other.

The disease was produced by inoculation with matter taken from an abscess in the arm of a man who was believed to have been infected by glanders. Previous to the inoculation the horse was healthy.
22. Sections of a Tumour removed from the palate, to which it was attached by a base of much less extent than its circum-

ference. Its surface is covered by thick, but apparently healthy, mucous membrane; and in its interior it appears composed of lobules of fatty matter.

23. Section of a Nose, in which the mucous membrane covering the posterior portion of the inferior turbinated bone is thick, soft, and spongy; so that in the recent state it resembled a vascular tumour or polypus projecting in the nasal passage.

24. A large lobed Polypus of soft texture, which was extracted from the nose. A portion of it which hung into the fauces is opaque, apparently from the thickening of its investing membrane; the rest is soft and more nearly transparent.

It was removed from a young lady in whom obscure signs of its existence had been long observed. It was attached to the mucous membrane of the nose by the narrow portion by which it is now suspended. The larger part of it lay in, and projected from, the posterior aperture of the nostrils, through which also the whole mass was extracted by seizing the portion which was hanging in the fauces.

25. A similar, but larger and more deeply lobed Polypus, which was also extracted through the fauces.

The patient was an elderly lady. She had long observed the disease, and had herself removed portions of the polypus, by seizing it with pincers whenever she could force it towards the cavity of the mouth, and cutting it with scissors. The part which was thus cut presents a cicatrised surface.

26. The Face of a Man, on which a new nose was formed three months before death, from a portion of the integuments of the forehead.

Some years before the operation the patient had cut his nose off, in a fit of insanity. He died with fever, shortly after the union of the transplanted part was completed.

Presented by F. C. Skey, Esq.

27. A mass of soft, spongy, vascular, and apparently medullary substance, which was removed from the surface of a tongue.

The patient was an elderly lady. On two previous occasions masses like this had grown rapidly, and had been removed. They were so slightly attached that they were peeled off by scraping the surface of the tongue with the fingers. After the removal of this mass, which is of nearly the shape and size of the tongue itself, the disease was speedily reproduced, and ended fatally. Case-Book, Vol. i. No. 217.

Presented by Robert Ceely, Esq.

SERIES XXIV.

INJURIES AND DISEASES OF THE PHARYNX AND ŒSOPHAGUS.

- Rupture, 9.
 - Digestion after death, 10, 13.
 - Effects of poisons, Series XV. 9, 23, 28.
 - Effects of inflammation.
 - Effusion of lymph, 6, 11.
 - Thickening and induration, 1.
 - Ulceration, 1, 7 ? 8, 14, 15, 16 ; Series XXII. 16.
 - Sloughing, 8 ; and in Series XXIII. 17.
 - Stricture, 1, 2.
 - Dilatation, 12.
 - Medullary tumours, 2, 5, 17 ?
 - Cancerous Ulceration, 3, 4, 7 ?
-

1. A PHARYNX and Œsophagus, with the Larynx and other adjacent parts. Just below the lower border of the cricoid cartilage, the canal of the œsophagus is reduced to a quarter of an inch in diameter, and appears flattened from before backwards. The tissues for some distance around this part are thickened, indurated, and consolidated. The mucous membrane of the anterior wall of the pharynx above the stricture is ulcerated, and appears œdematous, as if an abscess had been discharged through it. Below the stricture the œsophagus is healthy.

2. The lower half of an Œsophagus, with the cardiac portion of the Stomach. Within and just above the cardiac orifice there is an annular, flat, spongy growth, probably of medullary substance, ulcerated in its centre; by which growth, as well as by the thickening and contraction of the surrounding tissues, the termination of the canal of the Œsophagus is reduced to a very small calibre. Above the stricture the Œsophagus is dilated, its muscular coat is hypertrophied, and its mucous membrane appears œdematous, and is at one part superficially ulcerated. The walls of the stomach are healthy.
3. Part of an Œsophagus, with the Trachea and Bronchi. Opposite the bifurcation of the trachea, the walls of the Œsophagus are nearly surrounded by a firm cancerous growth. The surface of this growth, where it projects into the Œsophagus, is ulcerated; and ulceration, penetrating at one part through its whole thickness, has extended into the right bronchus, in the course indicated by the piece of quill.
4. An Œsophagus and Stomach. The lower third of the Œsophagus and a large portion of the stomach near its cardiac orifice are ulcerated through the whole thickness of their walls. The margins of the ulcers are sinuous, very abrupt, and ragged, and present the general aspect of cancerous disease.
5. A Pharynx, with the soft Palate, and part of the base of the skull. The upper part of the pharynx is completely filled by a nearly globular growth of soft medullary substance, with a warty surface. The growth appears to have had its origin in the walls of the pharynx, from which it projects, not only into the pharyngeal cavity, but also forwards into the mouth under the soft palate, and backwards towards the spine.

The patient was not aware of the existence of the tumour till within a few weeks of his admission into the Hospital, at which time it was nearly as large as it now appears. It often bled: and destroyed life by the hemorrhage, and by the impediment which it caused to both deglutition and respiration. A part of the same tumour projected through the basilar portion of the occipital bone, and extended along the outside of the Œsophagus, where it was connected with enlarged lymphatic glands full of soft medullary matter. Case-Book, Vol. i. p. 19, No. 41.

6. An Œsophagus, in which the whole of the mucous membrane is lined by a uniform thin layer of lymph. Strips of the lymph, which is soft as if recently effused, are reflected. In the portion of the pharynx which is preserved, lymph of the same kind is deposited in separate patches.

The patient was a man thirty-five years old. He died on the seventh day of acute pleuro-pneumonia. No signs of this affection of the pharynx and œsophagus had been observed during life ; and it is not probable that he had taken any large quantity of antimony. Case-Book, Vol. i. p. 54, No. 94.

7. Part of a Pharynx and Œsophagus, with the Larynx. The mucous membrane of a part of the pharynx and œsophagus is destroyed by ulceration. The surface of the ulcer is uneven and ragged, and in one point, marked by a bristle, the ulceration extends through the adjacent lateral wall of the trachea.
8. The Base of a Tongue, with the Pharynx and other adjacent parts. A large portion of the mucous and submucous tissues of the pharynx, and of one margin of the epiglottis, is destroyed by sloughing and ulceration. The mucous membrane covering the upper part of the larynx is œdematous and, in some parts, superficially ulcerated.

From a girl who was greatly debilitated by the effects of syphilis and mercury.

9. An Œsophagus and Stomach, exhibiting an extensive laceration of the muscular fibres of the former, which occurred in the act of vomiting. Both layers of the muscular fibres of the œsophagus are torn through at their connexion with those of the stomach ; and, by their retraction towards the upper part of the œsophagus, its submucous tissue is exposed over the whole extent of its last four inches. A similar retraction of the muscular fibres on the fundus of the stomach has taken place, exposing a large portion of its submucous tissue. There is a small laceration of the mucous and submucous tissues of the œsophagus about two inches from the cardia.

The patient was a man sixty-five years old. For about a year before his death he had dyspepsia, and was believed to have stricture in the lower part of the œsophagus, for which probangs were passed. He was subject to vomiting, and could not swallow anything solid. He felt the rupture of the œsophagus during a slight act of vomiting, thirty-six hours before death. Great visceral disease is

stated to have been found after death ; but there is no appearance of stricture or of any change of structure having existed in the œsophagus previous to the rupture. Case-Book, Vol. i. p. 32, No. 68.

Presented by Beriah Brook, Esq.

10. An Œsophagus, with a small portion of the Stomach. About half the circumference of the walls of the œsophagus, at its lower end, is thin, soft, and pulpy, and in the centre of this part there is a large aperture with ragged flocculent margins, partially blackened. The adjacent parts of the œsophagus and stomach are healthy.

It is probable these changes were produced after death by the action of the gastric fluid.

11. An Œsophagus, with a portion of the Stomach. The inner surface of the œsophagus is covered by lymph, deposited in strips corresponding with the wrinkles of its lining membrane. Portions of the lymph have been detached ; and the subjacent membrane appears unaltered.

There was no reason to suppose that this deposit of lymph was occasioned by poison.

12. An Œsophagus, with a portion of the Stomach. A dilatation of the œsophagus commences immediately below the larynx, and gradually increases to its termination in the stomach. In its lower half the œsophagus measured nearly six inches in circumference. In the upper half of the dilated œsophagus, the lining membrane is sound : in its lower half, the greater part of this membrane is superficially ulcerated, and shreds of it hang in the interior of the tube. Just above the stomach, the complete removal of the lining membrane exposes the muscular fibres of the œsophagus, which are here, and on every part of the canal, hypertrophied. The passage from the œsophagus into the stomach was free ; and the stomach was healthy.

The patient was twenty years old. He had had signs of this disease for about eighteen months before his death, with frequent sickness about two hours after taking food, pain and tenderness in the epigastric region, and a feeling as if his food stopped at the lower part of the œsophagus. He died with peritonitis. Case-Book, Vol. i. p. 79, No. 118.

13. An Œsophagus, with a portion of the Stomach. There is almost

entire destruction of the coats of the œsophagus, for three inches above the stomach, and in nearly the whole circumference of the tube. The portion of the œsophagus which remains in this situation is pale, soft, and pulpy. The stomach appeared healthy.

From a child who died in consequence of an accidental injury. No sign of affection of the stomach had existed before death, and the characters of the changes indicate that they were the result of the action of the gastric fluid after death.

14. An Œsophagus, Trachea, and adjacent parts, exhibiting the remains of an abscess, which had formed in the deep cellular tissue of the neck, and had burst in two directions, namely, through the upper part of the œsophagus, and through the right pleura into the cavity of the chest. A bougie indicates the course of the abscess on the inner side, and across the front, of the sheath of the carotid artery and jugular vein.

The patient was a strong man, thirty-one years old. He was admitted into the Hospital with pneumo-thorax on the right side and general emphysema. After his death it was stated that he had had pain in his throat and difficulty of swallowing, for some time before those symptoms ensued which indicated the penetration of the pleural cavity. Case-Book, Vol. i. p. 129, No. 156.

15. Portion of the Œsophagus of an elderly woman. The whole of the tissues on a part of its anterior surface are penetrated by an ulcer of an oval form with irregular edges. The base of the ulcer is formed by a mass of bronchial glands.

Presented by Dr. Black.

16. The Pharynx, Larynx, and other adjacent parts of a child who died with scarlet fever. The mucous membrane of the pharynx and upper part of the œsophagus is extensively and deeply ulcerated. Some of the ulcers are isolated, and are quite irregular in form; others have coalesced; in both cases their arrangement is exactly symmetrical. The tissues beneath and adjacent to the ulcers are thickened and œdematous.

Presented by Dr. West.

17. A Pharynx, with the Tongue, Larynx, and other parts. A tumour of almost globular form, and nearly an inch in diameter, is situated in the fold of membrane connecting the side of the

epiglottis with the right arytenoid cartilage and lining the adjacent wall of the pharynx. It is loosely fixed, so that it might hang either in the right side of the pharynx, or above and nearly closing the superior aperture of the larynx. A section of it shows that its interior is lobulated, soft, elastic, and obscurely fibrous, like a medullary tumour. A small portion of its surface has sloughed. All the adjacent part of the mucous membrane is deeply wrinkled; the fluid, by which it was œdematous, having escaped.

The patient, a man about forty years old, had for some months suffered with pain in the throat, and difficulty of breathing, and of deglutition. He stated that these were always relieved by the discharge of matter; but the only source from which these discharges appeared to have taken place was a small abscess in the left tonsil. A sudden attack of extreme dyspnœa coming on, tracheotomy was performed; but the patient shortly after died.

SERIES XXV.

INJURIES AND DISEASES OF THE LARYNX AND TRACHEA.

- Obstruction by foreign bodies, 26.
 - Ossification of the cartilages, 18, 20.
 - Effects of inflammation.
 - Effusion of serum and lymph in the submucous tissue (Œdema Glottidis), 7, 14, 21.
 - Effusion of lymph on the mucous membrane.
 - In croup, 6, 11, 15.
 - typhus, 19.
 - small-pox, 10, 13.
 - Thickening and induration of the mucous and submucous tissues, 2, 12, 14.
 - Abcess, 10, 16.
 - Ulceration of the mucous and submucous tissues.
 - Simple or aphthous, 3, 21.
 - Syphilitic, 5, 8? 24.
 - With elephantiasis, 14.
 - Tuberculous, referred to below.
 - Ulceration and necrosis of the cartilages, 1, 4, 5, 8, 9, 16, 22, 24, 27.
 - Tumours and allied morbid growths.
 - Nævus? 17.
 - Medullary cancer, 22, 25.
 - Tubercle, 2?, 3, 23, 27.
 - Illustrations of laryngotomy and tracheotomy, 7, 19, 23, 9, 15, 12.
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1. A LARYNX, in which there is necrosis with separation of a large portion of the cricoid cartilage. Previous to the necrosis the cartilage had ossified. The separated portion lies in a large cavity like an abscess in the walls of the larynx.

2. Portion of a Larynx, exhibiting an irregular, probably tuberculous, ulceration of the mucous membrane covering the chordæ vocales; the remaining tissue is so thickened that the rima glottidis is nearly closed.
3. A Larynx and Trachea. The whole of the mucous membrane covering the inferior surface of the epiglottis and lining the larynx and trachea presents closely set, minute, and, for the most part, shallow ulcers, which have in some characters coalesced so as to give the appearance of diffuse superficial ulceration. Near the anterior extremity of each chorda vocalis there is a small, oval, excavated ulcer, the result, probably, of tuberculous disease. The uvula is bifid.
4. A Larynx, exhibiting the destruction of great part of the thyroid, cricoid, and arytenoid cartilages, by ulceration.

Previous to the ulceration the diseased cartilages were ossified. The patient died suffocated, after a short illness. The mucous membrane about the diseased cartilages was very oedematous.
5. A Larynx and Trachea, with the base of the Tongue. The whole of the epiglottis, and part of the arytenoid cartilages, with their connecting folds of membrane, have been removed by ulceration.

From a young woman who had long suffered from syphilis, for which she had taken large quantities of mercury.
6. The Larynx and Trachea of a child which died with croup. A thin layer of lymph, of a greenish colour, extends from the under surface of the epiglottis to about half an inch below the cricoid cartilage.
7. The Larynx with a part of the Trachea of a man who died with acute laryngitis. The mucous membrane covering the epiglottis, and lining the whole interior of the larynx, is swollen by a copious effusion of serum and lymph in its tissue. The ventricles of the larynx are nearly obliterated by the swelling of the membrane and the consequent approximation of their borders. A small quantity of lymph is effused on a part of

the mucous membrane over the right side of the epiglottis and thyroid cartilage.

The patient was about fifty years old, and was healthy till within thirty hours of his death, when signs of acute laryngitis ensued. When brought to the Hospital suffocation was imminent. Tracheotomy was immediately commenced; but he died before the operation was completed. Case-book, Vol. i. p. 147, No. 170.

8. A Larynx, exhibiting a large well-defined ulceration of the mucous membrane extending into the substance of the cricoid cartilage, which is partially ossified. Around the ulcer the mucous membrane is thickened and puckered.

From a woman twenty-four years old, who had had signs of laryngitis for a week, and died suffocated by the closure of the glottis. Case-Book, Vol. i. p. 24, No. 55.

9. A Larynx, exhibiting necrosis and separation of the left arytenoid cartilage, and of part of the cricoid cartilage. Previous to the necrosis the separated portions of cartilage had become osseous. The opening in the front of the trachea was made during life, for the relief of respiration.

The patient, a man between forty and fifty years old, had been profusely salivated for syphilitic disease. After this, dyspnœa and other signs of obstruction in the larynx gradually increased for a month; and when they had been for several days extremely severe, the opening was made through the cricoid cartilage and the first ring of the trachea. The patient lived eight days, and died with pleurisy. The case is related by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, Vol. vi. p. 223. London, 1815. Case-Book, Vol. i. p. 121, No. 144.

10. A Larynx and Trachea. Just above the chordæ vocales there is a fistulous ulcer beneath the mucous membrane of the back of the larynx, in front of the arytenoid cartilages. Part of its course is marked by a bristle. The mucous membrane covering the whole of the larynx and trachea is thickened, and rough on its internal surface, as if by a thin deposit of lymph. Near the attachment of the epiglottis are several small superficial ulcers.

The patient died with small pox.

11. The Larynx and Trachea of a child who died with croup. A continuous thin and very delicate layer of lymph is deposited upon the mucous membrane lining the larynx, trachea, and main bronchial tubes.

12. The Larynx and Trachea of a man on whom the operation of tracheotomy was performed twelve years before death. The orifice in the trachea is situated immediately below the cricoid cartilage. The rima glottidis is almost closed by the thickening and contraction of the mucous membrane lining the larynx. The chordæ vocales also are so much shortened that the arytenoid cartilages are within a quarter of an inch of the angle of the thyroid cartilage. The trachea is healthy.

The patient continued to the time of his death to breathe easily through a canula in the opening made in the operation.

13. The Larynx and Trachea of a patient who died with small pox. Lymph is thinly deposited over the surface of the mucous membrane.

14. A Larynx, with the Tongue. The mucous membrane covering the epiglottis and the upper part of the larynx is thickened and superficially ulcerated.

From a negro twenty-four years old, who had had elephantiasis for two years. He died with gangrene of the lungs; and the mucous membrane of the tongue, soft palate, epiglottis, and neighbouring parts was found ulcerated and tubercular. Case-Book, Vol. i. p. 33, No. 70.

15. The Larynx, Trachea, and Bronchi of a child who died with croup. The mucous membrane is covered by an abundant but not continuous deposit of lymph, which extends from the inferior surface of the epiglottis to the main bronchi. The aperture in the upper part of the trachea was made during life for the relief of respiration.

Presented by Herbert Evans, Esq.

16. A Larynx, in which an Abscess formed around the greater part of the thyroid cartilage. A large portion of the right ala of the cartilage is destroyed by ulceration; nearly all the rest of both its surfaces is exposed; and there is a large opening of communication between the abscess and the interior of the larynx.

From a man, twenty-seven years old, who had ulceration of the tonsils and the back of the pharynx. He died gradually exhausted. Case-Book, Vol. i. p. 39, No. 77.

17. The Larynx of a child two years old. The surface of the

mucous membrane lining the thyroid cartilage, the ventricles of the larynx, and the lower part of the epiglottis, is occupied by a wart-like growth composed of numerous small, oval, pedunculated bodies, closely set together, and of a firm consistence.

The child had had dyspnoea from the time of birth, and died suffocated.

18. A Larynx from an old woman. The thyroid, cricoid, and arytenoid cartilages are almost entirely ossified. Osseous matter is also deposited in one of the thyro-hyoid ligaments and in the epiglottis.

19. A Larynx and Trachea, of which the mucous membrane is almost uniformly lined by a thin layer of lymph, which is slightly adherent, and is rough and granulated on its inner surface.

The patient, a woman twenty-five years old, had had fever. During her recovery, but while she was very weak, symptoms of acute laryngitis ensued, for which laryngotomy was performed on the third day. She lived twelve hours; and after death all the bronchial tubes were found similarly lined by lymph. Portions of them are preserved in Series XIV. No. 58. The case, as related by Mr. Lawrence, is in the *London Medical Gazette*, Vol. xxxvi. p. 307, 1845.

20. Portion of a Trachea from an old man. The cartilages are all ossified.
21. A Larynx exhibiting ulceration of the mucous membrane covering the epiglottis, the laryngeal ventricles, and the folds between the epiglottis and arytenoid cartilages. The ulcerated surface appears covered by granulations. The epiglottis is also shortened and thickened; and the submucous tissue of the upper part of the larynx is very œdematous.
22. A Larynx, with some of the contiguous lymphatic glands. There is a flat spongy growth, apparently of medullary substance, on the mucous membrane covering the epiglottis, and the superior orifice of the larynx. A part of this growth has ulcerated. A deposit of soft substance nearly fills the enlarged lymphatic glands.

23. A Larynx with part of the Trachea, from a man in whom tra-

tracheotomy was performed two days before death. Upon the epiglottis, the arytenoid cartilages, and the chordæ vocales, the mucous membrane is thickened, ulcerated, and granular. Within the trachea, and especially upon its posterior wall, there is an almost continuous ulceration, which in some parts is superficial, in others extends deeply, and which at one point has formed an irregular opening through the walls of the trachea.

The patient died with phthisis. Tracheotomy was rendered necessary by imminent danger of suffocation; and the signs of the disease of the larynx had nearly concealed those of the disease of the lungs. The case is related by Dr. George Burrows, in the *London Medical Gazette*, Vol. xxi. p. 50. London, 1837.

24. A Tongue, with part of a Larynx, in which a circumscribed irregular ulceration has destroyed the epiglottis, the right arytenoid cartilage, and the fold of mucous membrane connecting them.

25. The Larynx of a child three years old. The cavity of the larynx is almost entirely occupied by a mass of tuberculous matter, in the shape of a warty growth, projecting from its mucous membrane.

The child was three years old, and had dyspnoea and cough from a week after its birth. It died with symptoms like those of croup. Tubercles were found in the lungs, spleen, liver, and mesenteric glands. *Case-book*, Vol. i. p. 98, No. 127.

Presented by H. Bateman, Esq.

26. The Larynx of a child three years old, which was suffocated by a pill lodging just beneath the vocal ligaments. Small portions of the pill lie loose at the bottom of the bottle, but the greater part of it has been dissolved by the alcohol; the mucous membrane is stained by it.

Case-book, Vol. i. p. 125, No. 149.

27. A Larynx and Trachea, with the base of the Tongue and the adjacent parts. The upper two-thirds of the epiglottis have been destroyed by tuberculous ulceration, and all the adjacent part of the mucous membrane, as far down as the chordæ vocales, is deeply ulcerated. 'There is also a distinct oval ulcer on the mucous membrane covering each chorda vocalis, near

its attachment to the arytenoid cartilage. The ulceration is irregular on each side, but exactly symmetrical.

28. A Larynx; at the upper part of which there is a large and very firm medullary tumour. The tumour is attached by a broad base to the left upper border of the thyroid cartilage and to the adjacent tissue, and it occupies nearly all the space between the epiglottis and arytenoid cartilages, leaving only a narrow chink at the right side for the admission of air to the glottis. Its surface is irregular and slightly ulcerated.

From a man sixty years old. The disease had been in progress for at least fifteen years; but its effects were not severe till shortly before his death.

SERIES XXVI.

INJURIES AND DISEASES OF THE KIDNEYS, THEIR PELVES, AND THE URETERS.

Injuries by violence, 14.

Atrophy, 10, 30 ; Series XXVII. 23.

Dilatation and other effects of obstruction of the pelvis or ureter, 2, 3, 4, 5, 6, 16, 24 ;
Series XXVII. 8, 9, 23, 29.

Inflammation and its consequences, 5, 6, 9, 13.

Granular degeneration (Bright's disease ; Albuminuria), 22, 25, 23, 30.

Cysts, 1, 15, 20, 21.

Medullary tumours, 12, 19.

Tubercle, 7, 9? 18, 26, 27.

Entozoa, 31? and among the Entozoa in the Physiological division of the Museum.

Calculi and other unorganized deposits, 8, 9, 16, 17, 24, 28 ; Series XXVII. No. 23.

1. PORTION of a Kidney, on which there is a large Cyst with thin membranous walls which contained a serous fluid. Half the cyst is imbedded in the kidney, and half projects from its surface.
2. A Kidney, of which the pelvis and infundibula are dilated into a large sac. The greater part of the proper substance of the gland is absorbed ; its remains form a thin covering over a portion of the sac.
3. A Kidney, exhibiting great enlargement of the ureter, pelvis, and infundibula, with absorption of part of its substance.

4. A Kidney, of which the ureter is so contracted at its commencement that it will only admit the passage of a bristle. The pelvis and infundibula are considerably enlarged, and there is an almost complete absorption of the proper substance of the kidney.

5. A Kidney, which is much enlarged in consequence of the lodgement of a calculus at the commencement of the ureter. The infundibula are dilated; their mucous lining and the proper substance of the organ are indurated, and appear to be the seat of purulent deposit. Portions of glass are introduced through two ulcerated apertures leading directly from the kidney to the descending colon. The portion of the colon which thus communicates with the interior of the kidney exhibits numerous small ulcers of its mucous membrane. The capsule of the kidney, a part of which is reflected, is thickened, indurated, and consolidated with the surrounding tissues.

The patient was a young man who had suffered from attacks of pain in the loins, which were always relieved by discharge of pus from the rectum. A quantity of pus was found also to have passed from the lower part of the kidney to the back of the psoas muscle. Case-book, Vol. i. p. 20. No. 42.

6. A Kidney, in which there is enlargement of the pelvis and infundibula, with thickening and superficial ulceration of their mucous membrane. The glandular substance of the organ is nearly absorbed; its surface appears lobed in consequence of the projection of the dilated infundibula.

7. A similar specimen, in which, moreover, there is abundant tuberculous deposit on the mucous membrane, and in the cavities, of the dilated infundibula.

8. A Kidney, the pelvis and infundibula of which are dilated and filled by calculi. One large calculus fills the pelvis, and branches from it are continued into many of the infundibula. Smaller calculi fill the other infundibula. The glandular substance of the kidney is nearly absorbed.

The specimen is represented by Dr. Marcet, in his 'Essay on Calculous Disorders.' Pl. ii. London, 1817.

9. A Kidney, with a large calculus impacted in the commencement of the ureter. The kidney is much increased in size, and its substance appears indurated, and in parts, infiltrated with pus. The pelvis and infundibula are greatly dilated, and their mucous membrane is thickened, and made rough by the copious deposit of lymph and pus, or of tuberculous matter, upon its surface.
10. A Kidney, reduced to about one fourth of its natural size, by the absorption of its glandular substance. The ureter is obliterated at its commencement: the pelvis is as large as usual. The other kidney of the same patient was healthy in structure, but of nearly twice the natural size.
11. A Kidney, on the surface of which there are numerous small cysts containing a thick dark-coloured fluid. The reflection of a portion of the capsule shows that the cysts are situated beneath it.
12. Section of a mass of soft Medullary Substance, mixed with blood, which had its origin in one of the kidneys of a child about ten years old, and nearly filled the cavity of the abdomen.
13. Section of a Kidney, the pelvis and infundibula of which are dilated. The mucous membrane lining them and the ureter is thickened, indurated, and coarsely granulated on its surface.
14. A Kidney, in the pelvis of which there is a circular aperture, communicating with a very large sac. A part only of this sac is preserved. It was situated behind the peritoneum, and extended forwards from the region of the kidney to the anterior wall of the abdomen: its walls were formed by cellular tissue thickened and indurated, and it contained pus mixed with urine. A portion of glass is passed through the aperture in the pelvis of the kidney into the sac; and another portion is passed through the ureter, which runs for a considerable distance in

the substance of the walls of the sac, and then opens into its cavity at a distance of about two inches from the aperture in the pelvis. The kidney itself appears healthy.

The patient, a woman forty years old, was knocked down by a cart; her left thigh was fractured, and she received some injury in the right hypochondrium. The next day there was much swelling and tenderness of the abdomen; but the swelling gradually subsided, and there remained a circumscribed hard tumour in the region of the liver, which increasing and appearing to contain fluid, was punctured about three weeks after the accident. Between two and three pints of urinous fluid were withdrawn. Ten days afterwards, six pints of a similar fluid were withdrawn; but it again accumulated, and the patient died exhausted ten weeks after receiving the injury. The preparation proves that the pelvis of the kidney had been ruptured, so as to permit the passage of urine into the adjacent cellular tissue, which urine, as it accumulated, was circumscribed by the thickening and induration of the tissue into the form of a sac. The case is published by Mr. Stanley, in the *Medico-Chirurgical Transactions*, Vol. xxvii. p. 8, London, 1844. Case-Book, Vol. i. p. 143, No. 168.

15. Portion of the Kidney of an old man, from the surface of which there projects a thin-walled membranous cyst, which contained about four ounces of clear yellow fluid like serum.
16. A Kidney, exhibiting the obstruction of the commencement of the ureter by a large calculus, and the consequent dilatation of the pelvis, and infundibula, and absorption of its glandular substance.
17. Section of a Kidney, of which nearly the whole of the glandular structure is absorbed. In its place, and in the pelvis and ureter, there is a soft and white substance, like mortar, consisting of phosphate of lime, with small proportions of carbonate of lime and of animal matter.

From a woman, sixty-two years old, who for twelve years before her death had no sign of renal disease. Case-Book, Vol. i. p. 42, No. 82.
Presented by S. G. Lawrance, Esq.
18. A Kidney, exhibiting an abundant deposit of tuberculous matter in its substance, and in the cavity of the pelvis.

From the same patient as the Penis, No. 31, in Series XXX.
19. Section of a Kidney, in which there are distinct circumscribed deposits of soft medullary substance. One of them, situated at

the exterior, is exposed by the removal of a layer of the cortical substance of the kidney.

20. Section of a Kidney, in the whole substance of which membranous cysts, of sizes varying from that of a pin's head to that of a hazel nut, are thickly scattered. The contents of most of these cysts were a yellow, viscid, and transparent fluid. Their walls are thin and in close apposition. Only thin layers of the proper substance of the kidney could be discovered intervening between some of the cysts and forming part of the exterior cortical layer. The vessels of the kidney are injected.
21. A Section of the other Kidney, of the same person, uninjected. It is similarly and equally diseased; and, like the preceding, is nearly three times as large as a kidney of ordinary size.
22. Section of a Kidney, in the cortical substance of which there is an abundant deposit, as if by infiltration, of a yellowish-white and moderately firm substance. A fine injection of size and vermilion through the renal artery shows that the whole organ, and especially the altered cortical substance, possesses less vascularity than is natural. The capsule of the kidney was stripped off more readily than usual, and the whole organ is large and soft. The other kidney was similarly altered.

From a young woman who died with acute general dropsy, and whose urine was albuminous.
23. Section of a Kidney, which is rather smaller than is natural and granulated on its surface. There appears to be a deposit of a yellowish-white and firm substance, giving its surface and its section a mottled aspect. The injection of size and vermilion through the renal artery has freely penetrated the cortical substance, and in a few situations appears to have penetrated the morbid deposit. The surface of the kidney is finely granulated.

The other kidney was similarly altered. The urine was albuminous.
24. A Kidney, with a large calculus obstructing the commencement of the ureter. Immediately below the obstruction the ureter is

completely obliterated: above it, the whole kidney is dilated into one large sac; its glandular substance appearing in some parts as a thin layer spread over the surface of the dilated infundibula.

From a lady, seventy-four years old, who had been subject for thirty-two years to attacks of renal disease, which were complicated towards the end of life by cancer of the intestines and other parts. The dilated kidney was adherent to the front of the abdomen, and had long been felt as a painful deep-seated tumour. Case-Book, Vol. i. p. 138, No. 162.

Presented by Thomas Davis, Esq.

25. Section of a Kidney, enlarged and appearing very pale and soft in every part, except those in which there are large blotches of effused blood. The principal branches of the renal vein are filled by firm dry coagula.

The patient, a lad about nineteen years old, died with acute dropsy and albuminous urine, which supervened on intemperance and exposure to cold a few weeks before his death.

26. Section of a Kidney, in which there are numerous small tuberculous deposits. A portion of the capsule is reflected, showing many similar deposits on the surface of the kidney. Most of the tubercles are round and disk-shaped; and many of them are softened, or present small cavities, in their centres.

From the same patient as the Bladder, in Series XXVII. No. 31; and the Prostate Gland, in Series XXIX. No. 19.

27. A Kidney, in which there are many large cavities formed in consequence of abundant tuberculous deposits in its substance. The cavities are lined by layers of false membrane coated by tuberculous matter. The ureter is thickened, and tuberculous matter covers its internal surface.

There were tubercles in the lungs and several other organs; including the Prostate Gland and Vesiculæ Seminales, in Series XXIX. No. 20.

28. A section of the Kidney of a female child five months old, the pelvis of which is nearly filled by a calculus. The substance of the kidney itself is healthy.

The child died with fits, which had occurred almost every day after the fifth week of its life. There were tuberculous deposits in the lungs and other organs.

Presented by Dr. West.

29. Section of a Kidney, with a calculus exactly filling its pelvis and chief infundibula. The substance of the kidney appears indurated, and its surface contracted; its pelvis and infundibula are thickened.

30. Sections of a Kidney contracted to half its natural size, and fissured and granular on its surface. Its whole substance appears pale and tough, and its cortical portion is reduced to a layer less than a line in thickness.

The patient was a woman thirty years old. She appeared healthy till six weeks before her death, when she became anasarcons and had albuminous urine. She died in a state of coma, with pleurisy and pericarditis.

31. Portions of numerous *Acephalocyst Hydatids*, which were discharged with the urine of a middle-aged man, and which, it is probable, were formed in the kidney.

SERIES XXVII.

INJURIES AND DISEASES OF THE URINARY BLADDER.

Rupture, 21; Series XXIX. 11.

Hypertrophy, especially of the muscular coat, 14, 29, 8, 11, 10, 15, 19, 24, &c.*
Saeculi.

Formed by protrusion, or hernia, of the mucous membrane, 10, 15? 17, 24, 25, 33;
Series XXX. 17.

„ all the coats of the bladder, 30, 32.

Effects of inflammation.

Effusion of lymph, Series XXX. 12, 33.

Thickening and induration of the mucous membrane, 5, 9, 11, 12, 16, &c.

Abscess between the coats, 34.

Superficial or diffuse ulceration, 1, 3, 5, 13, 16, 19, 20, 26.*

Ulceration through all the coats, 16; Series XXX. 16.

„ with growths or calculous deposits on the ulcerated surface, 1, 5, 6, 16,
32; Series XXX. 13, 16.

Sloughing, Series XXIX. 11.

Medullary and other tumours, 2, 4, 7, 15, 25, 27.

Tubercle, 31, 3?

Effects of calculi in the bladder, 9, 13, 16, 17, 22, 30.

Illustrations of lithotomy and its consequences, 18, 11, 12, 23, 13.

Illustrations of the puncture of the bladder and its consequences, 10, 28; Series
XXIX. 1, 16.

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1. THE Bladder of a woman, in which the mucous membrane has been completely destroyed by ulceration. The bladder is small, and its muscular coat, exposed by the ulceration, appears hypertrophied. Small portions of calculous matter are deposited on the ulcerated surface.

* Several of the simpler morbid conditions of the urinary bladder are also illustrated in Series XXIX. and XXX.

2. A Bladder, with a soft and shreddy medullary tumour growing from the mucous membrane near the centre of its posterior wall.
3. A Bladder, in which diffuse ulceration has removed the mucous membrane around its urethral orifice. Near the margin of the diffuse ulceration is a small, oval ulcer, with sharp, abrupt margins.
4. A Bladder, with firm, round tumours between the mucous and muscular coats of its fundus. One tumour projects into the cavity of the bladder; two others project upon its outer surface, and are covered by peritoneum and the muscular fibres of the bladder.
5. A Bladder, in which there is a mass of soft, broken, and apparently medullary, substance occupying the whole thickness of the coats of its fundus. The greater part of the mucous membrane is thickened and raised in uneven ridges, upon which thin layers of calculous matter are deposited.
6. A Bladder, exhibiting several irregular warty growths of soft substance from its mucous membrane.
7. A Bladder, half the cavity of which is filled by a broken, soft, and flocculent growth of medullary substance, apparently proceeding from its mucous membrane. The rest of its internal surface is superficially ulcerated.
8. The Bladder, with the Ureters and one Kidney, of a boy about ten years old. The muscular coat of the bladder is hypertrophied, and its mucous membrane is thickened, indurated, and very deeply wrinkled. Just before their terminations in the bladder, both ureters are so contracted that they would only admit the passage of a probe. Above these contractions they are both, in the rest of their extent, widely dilated. The pelvis and infundibula of the kidney are also dilated, and its glandular substance is partially absorbed.

Presented by S. G. Lawrance, Esq.

9. A Bladder, with the Ureters and Kidneys. The coats of the bladder are thickened, contracted, indurated, and superficially ulcerated, and its cavity contains a calculus. The ureters, and the pelves and infundibula of the kidneys are widely dilated.
10. A Bladder, behind which is a sac nearly as large as itself. The sac, which probably had its origin in the protrusion of the mucous membrane of the bladder between its muscular fibres, communicates with the cavity of the bladder by a small round opening just above the orifice of the right ureter. The muscular coat of the bladder is much thickened; its mucous membrane is healthy, but depressed in small pits between the muscular fibres. Above the communication of the sac with the bladder is an orifice, which was made by a trochar introduced from the rectum, for the relief of retention of urine. There is a smaller sac communicating with the bladder above the termination of the left ureter.
11. A Bladder, the coats of which are much thickened and indurated in consequence of the lodgment of a calculus in its cavity. The muscular coat is in some parts nearly half an inch thick: and the mucous membrane forms a tough white layer, from one to three lines in thickness, and raised in prominent folds in the cavity of the contracted bladder. The incision in the neck of the bladder was made in the performance of lithotomy.
- Presented by Charles Mayo, Esq.
12. The Bladder, Ureters, and Kidneys of a child upon whom the operation of lithotomy was performed a few days before death. The bladder is contracted, its muscular coat is hypertrophied, and its mucous membrane is thickened and indurated. The ureters, pelves, and infundibula of the kidneys are widely dilated.
13. The Bladder, Urethra, and a portion of the Os Pubis of a man upon whom the operation of lithotomy had been performed. A portion of the front of the bladder is destroyed by ulceration; the remaining part is thickened and diffusely ulcerated.

A large calculus is lodged within the prostate gland, in which, having become impacted in the prostatic portion of the urethra, it appears gradually to have formed a cavity of such size that only a thin layer of the proper substance of the gland remains around it.

14. The Bladder of a child, in which the muscular coat is exceedingly hypertrophied. Its other tissues appear healthy.

The child was four years old, and suffered intensely with signs of stone in the bladder; but no stone existed, nor was any disease found in the urethra or other part of the urinary organs. Case-Book, Vol. i. p. 24, No. 54.

15. A Bladder, exhibiting a general thickening of its coats, and a large mass of soft medullary substance attached to the mucous membrane of its posterior wall, just above the prostate gland. A sac, as large as the bladder itself, and filled by a similar medullary growth, communicates with the lower and posterior part of the bladder. This sac was situated between the muscular coat of the bladder and the peritoneum covering its posterior wall; one of the ureters terminates in it by an opening through which a quill is passed. A passage has been formed through the prostate gland by a silver catheter.

The man from whom this specimen was taken had had difficulty in passing urine, and occasional retention, for two years. In the last attack of retention the prostate gland, as shown in this specimen, was pierced; but the withdrawal of the urine did not reduce a swelling which could be felt above the pubes, and which was produced by the bladder pressed forward by the cyst full of medullary substance. It is uncertain whether this cyst be formed by dilatation of the urethra, or by mucous membrane protruded from the bladder between its muscular fibres; the latter supposition is the more probable. Case-Book, Vol. i. p. 27, No. 62.

16. A Bladder, contracted, indurated, and thickened, with ulceration extending through the middle of its posterior wall and forming a passage from its cavity into the rectum. This passage is laid open for the purpose of showing a calculus which is lodged within it. The ureters are dilated, and there is a small calculus in each just before its termination in the bladder. The mucous membrane of the rectum is raised into thick and hard folds. The three calculi at the bottom of the bottle were found in the bladder.

Presented by James Gillman, Esq.

17. Sections of a dried Bladder, of very large size, and with numerous cysts communicating with the posterior and lateral parts of its cavity. Within two of these cysts calculi are lodged. Fifteen calculi were found in the cavity of the bladder: these, which are arranged by the sides of the sections, appear to be composed of uric acid; they weigh from 12 to 880 grains each; their total weight amounts to 2703 grains.
18. The Bladder and Rectum of a child upon whom the operation of lithotomy was performed about a fortnight before death. A bristle is passed through the tract of the wound.
19. A Bladder, in which nearly the whole of the mucous membrane has been removed by ulceration.
20. A similar specimen, showing more plainly the enlarged fasciculi of the muscular coat exposed by the ulceration.
21. A Bladder, exhibiting a rupture of its anterior wall in a line from the prostate gland to the fundus.

The rupture was produced by a blow on the abdomen, in the same person as the rupture of the vena cava inferior, in Series XIII. No. 71, and of the ileum in Series XVI. No. 51.
22. A Bladder, exhibiting hypertrophy of its muscular coat, with enlargement of the prostate gland, and three large calculi nearly filling the lower half of its cavity and resting on the enlarged prostate. The ureters open in the narrow interspaces between the calculi.

Presented by J. H. Spry, Esq.

23. The Bladder and Kidneys of a man, upon whom the operation of lithotomy was performed five years before death. The cicatrix in the mucous membrane within the prostate and neck of the bladder is distinctly visible, and a membranous band extends across it between the front and back parts of the prostate, leaving a small channel, marked by a piece of glass, where it is probable that a portion of the wound in the prostate did not heal. One kidney is much reduced by the absorption of its

glandular substance : and its infundibula, pelvis, and a portion of the ureter, are filled by a large branched calculus. In the other kidney, the infundibula are dilated and filled by several calculi.

The patient had considered himself healthy from the time in which he underwent lithotomy; but for some weeks before his death, the symptoms of disease of the kidneys were evident. Case-Book, Vol. i. p. 57, No. 101.

24. A Bladder and Prostate Gland. The prostate is enlarged in both its lateral lobes, and a small round tumour is formed by the projection of its posterior part into the bladder immediately behind the orifice of the urethra. The muscular coat of the bladder is much hypertrophied; and its mucous membrane is thickened and indurated. At the upper part of the bladder is a small pouch communicating with its cavity by a narrow orifice, and apparently formed by a protrusion of the mucous membrane between the muscular fibres.

25. A Bladder, with an uniformly enlarged Prostate Gland. The bladder is thickened in its muscular coat. A soft, flocculent, and very vascular growth is attached by a narrow base to the mucous membrane at the lower posterior part of the bladder, immediately behind the orifice of the urethra. A portion of glass is introduced into a pouch or sac formed by the mucous membrane of a part of the lateral wall of the bladder protruded between the muscular fibres. There are two similar small pouches of the mucous membrane on the opposite side of the bladder, close to the termination of the ureter.

The morbid growth, which is probably of medullary nature, was the source of frequent and profuse hemorrhage.

Presented by Herbert Evans, Esq.

26. The Bladder of a middle-aged woman, the mucous membrane of which is extensively destroyed by ulceration.

Presented by Henry Bateman, Esq.

27. The Bladder of a woman, with its cavity nearly filled by a large tumour which apparently originated within the coats of its posterior part. Portions of glass are passed into the ureters, which open on the front surface of the tumour. The tumour is pale, soft, spongy, and of medullary character.

28. The Bladder and Urethra of a man in whom the bladder was punctured above the pubes, twelve years before death, on account of stricture in the urethra. The walls of the bladder are thickened, and small pouches of its mucous membrane are protruded between the muscular fibres. Connected with the front of the bladder is the fistulous tract extending through the parietes of the abdomen, through which the patient discharged his urine from the time of the puncture of his bladder to his death : it is lined by membrane similar to, and continuous with, the mucous membrane of the bladder. The urethra is contracted in its whole length, but pervious. A tough fibrous band an inch in length, and attached only by its extremities, extends from the verumontanum forwards to the membranous part of the urethra.

29. The Bladder, Ureters, and Kidneys of a boy thirteen years old. The bladder is contracted ; its muscular coat is hypertrophied ; and its mucous coat is ulcerated. The ureters are very tortuous and widely dilated, and their walls are thickened. The mucous membrane of each is rough, and lymph and pus are in some parts deposited upon it. The pelves and infundibula of both kidneys are also widely dilated, thickened and rough on their internal surfaces from similar deposit. The kidneys appear enlarged by the dilatation of their pelves and infundibula, but their glandular substance forms only a thin layer on their surfaces.

The patient had phimosis, and had suffered for four years with incontinence of urine. For three months before death he had severe symptoms like those of stone in the bladder. The operation for phimosis was performed, but he died exhausted. Case-Book, Vol. i. p. 76, No. 116.

Presented by Thomas Stone, Esq.

30. A Bladder, with part of the Urethra of a man on whom the operation of lithotrity was performed. There were two calculi in the bladder ; one of moderate size, which was broken by the instrument ; the other, of larger size, was not detected by the instrument, being lodged in a deep recess formed by the dilatation of all the coats of the bladder at its lower and back part, immediately behind the prostate gland.

The calculi are in Series XXXVII. No. 141.

31. A Bladder, exhibiting numerous distinct circular ulcers in its

mucous membrane. At the bases of some of these ulcers there are small tubercular deposits. The intervening portions of the mucous membrane, to the borders of the ulcers, are healthy.

From the same man as the tuberculous kidney, in Series XXV. No. 26. There were tubercles in the lungs and other organs.

32. A Bladder, with an enlarged Prostate Gland. The bladder is much thickened; its coats are indurated and consolidated; and its mucous membrane is in several parts incrustated with an irregular deposit of mucus mixed with calculous matter. At the upper and back part, immediately above the orifice of the left ureter, a portion of the bladder is distended into a sac of considerable size, of which the walls are thinner than those of the rest of the bladder, although all the coats appear to be comprised in the dilatation.
33. The Bladder of an old man, who had long suffered with stricture of the Urethra. Its muscular coat is thick, but weak and flaccid, and the mucous membrane is depressed in pits between the muscular fasciculi. On the right side are two large thick-walled sacs, each between three and four inches in diameter, communicating with the bladder by two small round apertures, and separated from each other by a partition formed by the union of their adjacent walls. They appear to have been formed by portions of the mucous membrane protruded, like herniæ, between fasciculi of the muscular coat, and growing and thickening as they were gradually dilated.

Presented by J. G. Johnson, Esq.

34. A Bladder, in the posterior wall of which two abscesses have formed. The cavities of the abscesses are exposed by the removal of the peritoneum; they occupied circumscribed spaces between the peritoneal and mucous membranes, in which spaces the muscular fasciculi alone remain, the cellular tissue between them having been destroyed in the suppuration. In several places also the mucous membrane lining the intermuscular spaces has been destroyed, so that the abscesses communicated with the cavity of the bladder.

SERIES XXVIII.

DISEASES OF THE TESTICLES AND SCROTUM.

DISEASES OF THE TESTICLES.

Atrophy, 25, 26, 53.

Imperfect development, Series XVII. 2, 38, 54.

Hydrocele of the tunica vaginalis, 2, 6, 47, 48, 7, 5, 23, 46, 8.

Hæmatocele, 1, 4, 44, 9?

Effects of inflammation.

Adhesion of the surfaces of the tunica vaginalis, 10, 11, 55, 56, 12, 52, &c.

Suppuration of the tunica vaginalis, 9.

Deposits of lymph in the testicle, 55.

Enlargement and induration, 9, 20, 34, 35, 39.

Abscess, 34, 45.

Ulceration and protrusion of the testicle (Fungus Testis), 21, 27, 29, 35, 39.

Cysts near the testicle, or in the spermatic cord (Encysted Hydrocele; Hydrocele of the cord), 3, 10, 28, 41, 43.

Such cysts containing blood (Hæmatocele of the Cord), 11.

Tumours and allied morbid deposits.

Fibrous tumours, 54?

Fibro-cystic (Hydatid Testicle), 19, 51, 17? 24? 37?

„ with cartilage, 17.

Medullary, 12, 13, 14, 15, 30, 31, 36, 40, 42, 49.

Tubercle, 22, 32, 33, 38, 50, 35.

Diseases of the vas deferens, 33, 53; Series XXIX. 15.

DISEASES OF THE SCROTUM.

Simple enlargement, 16.

Enlargement with induration (Elephantiasis Scroti), 18.

Ulceration; referred to above, under Protrusion of the Testicle.

Fatty tumour, 60.

Chimney-sweeper's cancer, 57, 58, 59.

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1. A TESTICLE, with its Tunica Vaginalis enlarged, thickened, indurated, consolidated with the surrounding tissues, and having a soft and dark substance, probably altered blood, adhering to its internal surface. The testicle is healthy.

2. An Hydrocele, in which the enlarged Tunica Vaginalis is thickened and indurated, so that it is like cartilage in texture. The testicle is healthy, and situated at the middle of the posterior wall of the sac. The spermatic vessels are separated, the vas deferens and the spermatic artery being placed close together, at some distance from the spermatic veins.
3. An Hydrocele in the Spermatic Cord. There are several very thin-walled cysts of different sizes communicating with each other, and nearly surrounding the upper and anterior part of the testicle; but none of them appears to communicate with the cavity of the tunica vaginalis.
4. A Testicle, with the cavity of the tunica vaginalis enlarged and filled with masses of soft fibrinous substance from coagulated blood. The tunica vaginalis is thick and hard; the testicle is healthy.
5. The Tunica Vaginalis and Spermatic Vessels from a case of hydrocele. In consequence of an unequal yielding of the tunica vaginalis, there is a distinct prominence of the swelling at its lower part. The testicle is situated at the lower and back part of the sac, just above this prominent part.
6. An Hydrocele. The bloodvessels of the tunica vaginalis and testicle are injected. The testicle is divided, and appears healthy.
7. An Hydrocele, with thickening of the enlarged tunica vaginalis and opacity of its internal surface.
8. A very large Hydrocele, with thickening of the tunica vaginalis. The testicle is situated near the middle of the posterior wall of the sac, and a thick and broad membranous partition extends from it transversely across the middle of the sac, which it separates into two cavities communicating only in front of the partition. The vas deferens is exposed running vertically along the back part of the tumour

9. A Tunica Vaginalis greatly enlarged and thickened. Its walls are from one to three lines in thickness, tough, and laminated; its internal surface is granulated and very vascular; and its cavity was filled with pus. The testicle is enlarged and indurated.
10. An Hydrocele in the Spermatic Cord. There is a single large membranous cyst immediately above and behind the testicle. Its inner surface is fasciculated, but lined by a smooth polished membrane. The opposite surfaces of the tunica vaginalis, which were adherent throughout, have been partially separated. The testicle is healthy.
11. A large Cyst in the Spermatic Cord, which contained blood. The cyst is situated just above the testicle, and the tissues round it are thickened, indurated, and consolidated. Part of the tunica vaginalis has been removed; the opposite surfaces were completely adherent.
12. A Testicle, of which the natural structure cannot be discerned, its place being occupied by a large oval mass of soft, medullary substance, traversed by partitions which divide it into many round masses. The tunica albuginea is thickened, and the opposite surfaces of the tunica vaginalis are adherent.
13. A similar specimen; but the medullary tumour is softer and less distinctly partitioned.
14. A similar specimen.
15. A similar specimen; but the medullary substance is firmer and more uniform, and a portion of it has protruded through a large ulcerated opening in the coverings of the testicle and in the scrotum. The protruded portion is softer than the rest, and blood is diffused through it. The surface of the protrusion is smooth.
16. A Scrotum greatly enlarged, in connexion, probably, with a

large hernia or hydrocele; for there is no apparent morbid change of structure in any of its tissues.

17. Section of a Testicle, in which the place of the natural structure is occupied by a large oval mass of firm substance, in which some small portions of cartilage and many cysts are imbedded.
18. A Scrotum greatly enlarged, with thickening and induration of the skin and subjacent tissue. The surface of the skin is elevated in lobes and folds separated by deep fissures, and wrinkled. The subjacent tissue is compact and filamentous, like the tissue of firm skin. The sebaceous glands are enlarged, and exhibit wide open orifices, surrounded by elevated rings: they are especially numerous at the upper part of the diseased structure.
19. Two Testicles (probably from the same person), in each of which there is a large oval mass of firm, obscurely-fibrous, and spongy substance, with small cells thickly interspersed in many parts of it. The cells have distinct membranous walls, and are from one to three lines in diameter; in some parts of the tumour many of them are closely crowded together with their walls in apposition.
20. Sections of a Testicle enlarged, indurated, and in many parts infiltrated with tuberculous matter. The part which is not filled by tuberculous matter is white and tough, like the tissue of a cicatrix. The tuberculous matter is in circumscribed masses of irregular shape, compact, and of a pale yellowish-white colour, which project above the surface of the substance in which they are deposited. Above the testicle there is a mass of similar indurated tissue with tuberculous deposit, situated either in the spermatic cord or in the upper part of the epididymis.

The patient was a gentleman forty-two years old. The testicle had been enlarging for seven years. Shortly before its removal the disease appeared to extend rapidly up the spermatic cord, and some enlargement was observed in the opposite epididymis.

21. A Testicle, with a portion of the Scrotum. The testicle, and a mass of soft, fungous, and vascular granulations from its anterior surface, are protruded through an ulcerated aperture in the scrotum. What remains of the natural structure of the testicle is imbedded in the back part of the protruded mass.
22. A Testicle, exhibiting a circumscribed mass of tuberculous substance in its centre. The adjacent part of the testicle appears healthy, and the morbid deposit has produced no enlargement. The other testicle was similarly diseased.
23. An Hydrocele, with thickening of the Tunica Vaginalis, and an irregular nodulated and tuberculated condition of its internal surface.
24. A Testicle, in which there is a large firm Tumour, in parts appearing fibrous, in parts spongy, and having numerous cells with distinct membranous walls imbedded in its substance. In some of the larger cells there are growths of soft substance. The opposite surfaces of the tunica vaginalis are partially adherent.
25. A Testicle, reduced to half its natural size, in consequence of the pressure of an hydrocele in the opposite side of the scrotum. The body of the testicle is much more atrophied than the epididymis.
26. The atrophied Testicle of an old man.
27. A Testicle, with a portion of the Scrotum. The testicle, covered on its anterior part by a layer of granulations, is protruded through an ulcerated aperture in its tunics and in the scrotum. A section of the protruded testicle shows that its glandular tissue is but little altered; but the epididymis appears indurated and consolidated with the adjacent tissues.
28. An Hydrocele in the Spermatic Cord. There are three distinct large cysts which do not communicate. Two of these are situated above the testicle, and the third behind it.

29. Portion of a Testicle, apparently unaltered in structure, but covered by granulations, which was protruded through an ulcerated aperture in its tunics and the scrotum, and was removed by operation.
30. Testicle, with the Inguinal Lymphatic Glands. The place of the internal structure of the testicle is filled by a large mass of medullary substance; and the lymphatic glands are similarly diseased.
31. Section of a Testicle, in which the place of the natural structure is filled by a large oval mass of soft, and apparently very vascular, medullary substance, like that in No. 12. The morbid growth extends from the upper part of the testicle into the cellular tissue of the spermatic cord. The opposite surfaces of the tunica vaginalis are adherent.
32. Two Testicles. One of them is enlarged to about twice its natural size by pale yellow and soft tuberculous matter, which is almost uniformly diffused through its substance, leaving scarcely any intervening portions of the glandular tissue. In the other testicle are several distinct and circumscribed deposits of tuberculous matter at its lower part, and in the epididymis.
- From a man thirty years old. The enlargement of the testicle first described had been observed many years. He died with tuberculous disease of the prostate, lungs, and other organs.
33. A Testicle, exhibiting distinct and circumscribed deposits of tuberculous matter in the epididymis. The vas deferens is obliterated and contracted. The body of the testicle appears healthy.
34. A Testicle, enlarged and indurated, with small circumscribed abscesses in its interior.
35. A Testicle, with a portion of the Scrotum. The testicle, enlarged and indurated, and exhibiting appearances of tuberculous matter deposited in it, is protruded through an ulcerated

aperture in its tunics and the scrotum. Its protruded surface is thinly covered by granulations; its posterior part appears healthy.

36. A Testicle, filled by a large mass of soft broken and flocculent medullary substance mixed with blood. The opposite surfaces of the tunica vaginalis are adherent.
37. A Testicle, filled by a mass of firm substance with small cells interspersed in it. Some of the cells contained blood, others a gelatinous substance.
38. Two Testicles enlarged, and having circumscribed deposits of tuberculous matter in their interior, and in that of each epididymis.
39. A Testicle, from a child seven years old. It is enlarged and indurated, and is protruded through an ulcerated opening in its tunics and the scrotum. Its protruded surface is covered by granulations.
40. A Testicle, with a portion of the abdominal walls. The place of the testicle is occupied by a soft brown medullary substance. The tunica vaginalis communicated with the cavity of the abdomen.

From the same patient as No. 5, in Series XVI. and No. 6, in Series XVIII.

41. An Hydrocele in the Spermatic Cord, consisting of a single cyst immediately above the testicle.
42. Sections of a Testicle, and of a large medullary growth connected with it. In one part of the preparation the section of the testicle exhibits its internal structure unaltered; and in this situation the morbid growth appears to arise from the tunica albuginea. The vas deferens is traced to the testicle.
43. A Testicle, with part of the Spermatic Cord. Along the epididymis there is a series of thin and delicate membranous

cysts communicating together, and having for their boundary the tunica vaginalis at its reflexion between the testicle and epididymis. They contained a transparent and colourless fluid. A bristle is passed beneath the vas deferens near its connexion with the epididymis.

44. A Testicle and Tunica Vaginalis. The tunica vaginalis, laid open by a section carried through the testicle from behind, is thickened and enlarged. Its cavity was filled by fluid blood; and irregular masses of solid blood-stained fibrinous substance adhere to its internal surface. The testicle appears healthy.
45. A Testicle and Spermatic Cord. In the centre of the testicle there is an irregular circumscribed abscess, from which a fistulous passage, (into which a portion of glass is introduced,) extends through the tunics of the testicle and scrotum. The substance of the testicle around the abscess is indurated.
46. Portion of a Tunica Vaginalis, from a Hæmatocele. It is thickened and indurated so as to appear almost cartilaginous in texture, and its internal surface is unevenly tuberculated.
47. Section of an Hydrocele, exhibiting the testicle at the lower and posterior part of the sac flattened by the pressure of the fluid.
48. A similar specimen.
49. A Testicle, in which the place of the natural structure is occupied by a nearly globular mass of soft, spongy, lobulated, medullary substance. The coverings of the testicle are sound. In the upper part of the preparation is the tunica vaginalis, enlarged in adaptation to the increased size of the testicle and by protrusion of intestine into it; a congenital hernia having been combined with the disease of the testicle.

Removed from a man forty-five years old. Five years afterwards he was in good health.
50. Sections of Two Testicles. Of one testicle the place of the

natural structure is entirely occupied by large masses of tuberculous substance. Of the other testicle, a small portion of the natural structure remains around a mass of tuberculous substance. Ulceration of the skin and of the tunics of one testicle had taken place, allowing the protrusion of the morbid substance to the outside of the serotum.

Both testicles were at the same time removed from a man forty years old.

51. A Testicle, removed by operation. Its interior is occupied by a tumour developed among the tubuli seminiferi and still surrounded by a thin layer of them. The lower part of the tumour is formed by an homogeneous compact yellow substance; but its chief mass is composed of a firm tissue, traversed by white fibres, in which there are numerous cysts. The walls of the cysts are closely connected with the surrounding tissue, and they are lined by a polished membrane. Most of them were filled by a fluid resembling mucus; others contained a fluid like serum; and in one, a small lobulated growth has arisen from the interior of the wall and nearly fills the cavity.

From a gentleman of middle age, in whom the tumour had grown slowly. Four years after the operation he was in perfect health.

52. Two Testicles. Upon the upper part of each there is a cyst of globular form which was filled by a watery fluid. It is probable that this cyst was formed between the layers of the tunica vaginalis, which in the rest of their extent are adherent. The structure of the testicles themselves is healthy.

53. The Vesiculæ Seminales and Vasa Deferentia, with an atrophied testicle, from an adult. The two vesiculæ are of the same size, and they both contained the usual brownish fluid. The atrophied testicle, with a portion of its vas deferens converted into a solid cord, is in the centre of the preparation. The other testicle was of its natural size.

54. Sections of a Testicle. A firm, apparently fibrous, tumour has been formed in the interior of the testicle. The remains of the glandular substance, unaltered in structure, are expanded around

the tumour, between it and the tunica albuginea. Bristles indicate the line of division between them.

Removed from a man twenty-five years old, who died with a large tumour in the abdomen about six months after the operation.

55. A Testicle, exhibiting the effects of acute inflammation in its interior. Several irregular cavities extend through the interior of the testicle, which were filled by pus and lymph. The pus has escaped, but portions of the lymph remain. The glandular tissue around these cavities is consolidated. A small quantity of transparent fluid was found in the sac of the tunica vaginalis, and there were partial adhesions between its opposite surfaces. At one part the tunica albuginea is thin and irregular on its surface, as if yielding to the enlargement of the testicle.

From a man in whom the operation of lithotrity had been performed. The disease of the testicle commenced a week after the operation, and nearly a week before the patient's death. A portion of the broken calculus had previously become fixed in the urethra. The bladder, No 30, in Series XXVII. was taken from the same patient.

56. Sections of a Testicle, with the cavity of the tunica vaginalis obliterated by layers of false membrane a third of an inch in thickness, and very tough and compact. At the posterior part, by the side of the epididymis, earthy matter has been deposited in the midst of the new tissue. The substance of the testicle is soft, but not otherwise diseased; it is of natural size, but the epididymis is enlarged and indurated. All the tissues around the tunica vaginalis appeared thickened, adherent, and hard, and, together with the thick layer of false membrane, gave the characters of a considerable enlargement of the testicle itself.

The other testicle was similarly but less diseased.

57. Portion of a Scrotum, on the surface of which there is an elevated, oval, warty growth, of firm texture, with a slightly granular, smooth, convex surface, which was vascular but not ulcerated. The margins of the growth project a little over the surface of the adjacent skin. By the side of this growth is one of smaller size and superficially ulcerated.

From a young chimney-sweeper.

58. Portion of the Scrotum of a chimney-sweeper, of which a large part of the surface is covered by a very elevated warty growth of firm compact substance, the surface of which is nodular, deeply fissured, and ulcerated.
59. Portion of the Scrotum of a chimney-sweeper, in which, by the further progress of the disease shown in the two preceding specimens, there is a deep ulcer with thickened sinuous margins. Along one margin of the ulcer there are several small warty growths, like that in No. 57, and superficially ulcerated.
60. A large fatty Tumour, removed from the lower and back part of the Scrotum. It has the lobular outline and the usual structure of the common fatty tumour or lipoma.

The patient was an otherwise healthy gentleman forty years old. The tumour had been observed three years, and had the characters of a large scrotal hernia, except that the testicle lay in front of it, and that it had no connexion with the cavity of the abdomen, although it extended as high as the external inguinal ring. The patient recovered after its removal. The case, as related by Mr. Lawrence, is in the *London Medical Gazette*, Vol. xxxvi. p. 177, London, 1845.

SERIES XXIX.

DISEASES OF THE PROSTATE GLAND AND VESICULÆ SEMINALES.

DISEASES OF THE PROSTATE GLAND.

Enlargement, 1, 2, 3, 11, 13, 16, 18; Series XXVII. 22.

Enlargement affecting principally the posterior part, or middle lobe, of the gland
6, 7, 8, 12, 21; Series XXVII. 24, 25.

Ulceration, 12.

In cavities containing urinary calculi, 10; Series XXVII. 13.

Tumours and allied morbid deposits.

Fibrous, 9?

Medullary, 22, 11?

Melanotic, 17?

Tubercle, 19, 20, 23.

Calculi in the ducts, 4, 5; Series XXX. 6.

Perforation of the prostate by instruments, 1, 8, 11, 21; Series XXX. 18, 21.

DISEASES OF THE VESICULÆ SEMINALES.

Tubercle, 14, 20, 23.

Hydatids? 15.

1. A PROSTATE GLAND, with parts of the Bladder and Rectum.

The gland is greatly enlarged. The principal enlargement has taken place at the sides of the gland, and in the portion which is above and in front of the urethra: this portion is increased to upwards of an inch and a half in thickness, while the portion behind and below the urethra is scarcely thicker than is natural. The urethra within the prostate is flattened laterally, and contracted. A portion of glass is intro-

duced into a passage made by a trochar during life, from the rectum through the prostate gland into the urethra. The orifices of the ureters are much dilated.

2. A Bladder, with the Prostate Gland enlarged and indurated. As in the preceding specimen, the chief enlargement is at the sides and anterior part of the gland; but it is irregular, so that the urethra within the prostate is not only flattened, but is also turned from its regular direction by portions of the gland projecting into it.
3. A Bladder, with the Prostate Gland greatly and uniformly enlarged. The urethra within the prostate is deepened and laterally compressed. The muscular coat of the bladder is hypertrophied; bristles are passed beneath strong fasciculi of muscular fibres extending from the ureters to the neck of the bladder.
4. Prostate Gland, in which numerous small cells are filled by brown calculi.
5. A similar specimen, but with smaller cells and calculi.
6. A Bladder with the Prostate Gland. The gland is generally enlarged; but its posterior portion, or middle lobe, is enlarged much more than any other portion of it, and projects in the form of a round tumour into the cavity of the bladder, immediately behind the orifice of the urethra. The muscular coat of the bladder is hypertrophied. The ureters are dilated and thickened. Immediately above one of the ureters is a small cyst communicating with the bladder.
7. A similar specimen; but the prostate not being divided, as it is in the preceding preparation, exhibits more plainly the manner in which, when enlarged, it projects into the neck of the bladder, and, especially, the manner in which the enlarged middle lobe projects behind and above, and partially overhangs, the orifice of the urethra.

8. A Bladder, with the Prostate Gland, exhibiting a general enlargement of the gland, with predominant enlargement of its middle lobe. The enlarged middle lobe, and the portions of the gland and of mucous membrane which connect it with the enlarged lateral lobes, form a ridge across the neck of the bladder, behind the orifice of the urethra. Through the middle of this ridge a passage was formed by a catheter.

Presented by R. S. Eyles, Esq.

9. Section of a Bladder, Prostate Gland, and Urethra. The prostate gland is enlarged, and some tumours growing from it project into the bladder. There was a calculus in the bladder, which was removed by the lateral operation a fortnight before death; and in the progress of the operation, one of the tumours arising from the prostate was completely detached. This tumour is suspended in the lower part of the bottle; it is of oval form, about three quarters of an inch in diameter, and appears to have been attached by a small pedicle.

The calculus is preserved in the Series of Urinary Calculi, No. 8.

10. A Prostate Gland, in each lateral lobe of which there is a large irregular cavity, formed by ulceration, and communicating with the urethra by the side of the caput gallinaginis. Urinary calculi have been formed in these cavities. The mucous membrane at the neck of the bladder and in the prostatic part of the urethra is diffusely ulcerated.
11. A Bladder and Prostate Gland, with part of the Rectum. The prostate gland is exceedingly large, its surface is knobbed, and lobulated growths project from it into the cavity of the bladder. A passage was formed through the prostate by a catheter. The muscular coat of the bladder is thickened, and its mucous membrane is ulcerated. At the upper and back part of the bladder is a large irregular aperture formed by the sloughing of its coats, through which urine escaped into the abdomen. The rectum is much curved and compressed beneath the enlarged prostate.
12. A Bladder and Prostate Gland. Both the lateral and middle

lobes of the prostate are enlarged, but the middle lobe is enlarged in a much greater degree than the rest, and forms a nearly disc-shaped swelling, upwards of an inch in diameter, which projects into the cavity of the bladder, and overhangs the orifice of the urethra. The surface of this part is ulcerated. Several small cysts, or pouches, are formed by the protrusion of the mucous membrane between the hypertrophied muscular fibres of the bladder.

13. A Bladder, with an uniformly enlarged Prostate Gland. Numerous warty growths of a soft substance are connected with that part of the enlarged prostate which is prominent in the neck of the bladder, and thence extend, covering the mucous membrane, as high as the orifices of the ureters.
14. Two specimens of *Vesiculæ Seminales*, enlarged, indurated, and having deposits of tuberculous matter upon their lining membranes.
15. A Bladder, to the posterior part of which a cyst is attached, which contained *acephalocyst* hydatids. The *vesiculæ seminales* and *vasa deferentia* are closely connected with the cyst: and the lower part of the right *vas deferens* communicates with it by two orifices into which a bristle is passed. A portion of this *vas deferens* is wanting; and it appeared that the cyst might have originated in the dilatation of the deficient portion of the tube. The walls of the cyst are thin, but tough and firm; the hydatids found within it are at the bottom of the bottle.
16. A Bladder, with an enlarged Prostate Gland, from a man in whom the bladder had been punctured above the pubes eight years before death. The fistulous passage through which the urine was discharged is about four inches in length and extends from the front of the bladder immediately above the prostate, through the abdominal walls. A piece of glass is introduced into this passage. The lateral lobes of the prostate are enlarged, and a distinct portion of the gland, flattened and

triangular, projects into the bladder immediately behind the orifice of the urethra.

The calculus No. 126 was found in the bladder.

Presented by William Kingdon, Esq.

17. A Bladder and Prostate Gland, from a child five years old.

The prostate gland is considerably enlarged both in its lateral and middle lobes. The natural structure of the gland has entirely disappeared, and its place is occupied by medullary substance, a portion of which is of dark-greyish colour, perhaps from the deposit of melanotic matter. There are also similar dark grey deposits in the cellular tissue around the prostate and the neck of the bladder.

The child had been subject for four months to irritability of the bladder. Ten days before death it had retention of urine, which was succeeded by paralysis of the bladder. The case is described by Mr. Stafford, in the *Medico-Chirurgical Transactions*, Vol. xxii. p. 218, London, 1839.

Presented by R. A. Stafford, Esq.

18. A Bladder and Prostate Gland. The prostate is much enlarged, and distinct round portions of it project into the neck of the bladder, both behind and in front of the urethra. A portion of coloured glass is passed through the urethra within the prostate, which takes a very oblique course, in consequence, apparently, of the left lobe of the gland being more enlarged than the right.

19. Sections of a Prostate Gland from a young man, with round circumscribed masses of tuberculous matter deposited in it.

There were tubercles in the lungs and other organs. The kidney of the same patient is preserved in Series XXVI. No. 26, and the bladder in Series XXVII. No. 31.

20. Vesiculæ Seminales, Prostate Gland, and part of the Bladder. Sections of the prostate and left vesicula seminalis exhibit tuberculous matter deposited in the interior of each. In the vesicula seminalis the tuberculous matter forms a uniform lining to the mucous membrane, the reticular arrangement of the surface of which remains distinct. In the prostate it is almost uniformly infiltrated through its left half, and some of it is softened: the right side of the prostate is nearly healthy.

From a young man in whom there were tubercles of the lungs and other organs.

His left kidney is preserved in Series XXVI. No. 27. The right kidney was healthy. The left testicle had tuberculous deposits in its interior: the right was healthy.

21. A Bladder and Prostate Gland. The prostate is greatly enlarged, and its middle portion projects into the neck of the bladder, in the form of a large broad-based cone nearly two inches high. This part has been deeply torn by catheters, which were arrested by it in the attempt to relieve retention of urine. The coats of the bladder are thick, but weak and flaccid. The mucous membrane is in many places depressed between the fasciculi of the muscular coat.

From a man seventy years old, who had long had stricture of the urethra. The bladder was tapped above the pubes two months before death. He died exhausted with continued inflammation of the bladder and prostate.

22. The Bladder and Prostate Gland of a child four years old. None of the natural structure of the prostate can be discerned: in its place there is a mass of soft, white, obscurely fibrous, and shreddy, medullary substance, nearly spheroidal in form, and four inches in diameter. This mass projects backwards between the bladder and rectum, raising the pouch of peritoneum between them to the level of the upper part of the bladder: it must have nearly filled the pelvis. Its posterior and lower part is either superficially ulcerated or has been broken. The peritoneum covering its upper part is extremely congested.

23. A Prostate Gland, of which nearly the whole substance has been destroyed by tuberculous ulceration. Only a thin shell of the gland remains around a cavity with irregular walls, which was traversed by some cords of the indurated tissue of the gland infiltrated with tuberculous matter, and which contained pus and detached portions of the gland. The cavity communicates by a wide orifice with the urethra.

The patient was an old man, who had tuberculous disease of the lungs, kidneys, testicles, and other organs. He died with inflammation of the bladder.

SERIES XXX.

INJURIES AND DISEASES OF THE PENIS AND URETHRA.

DISEASES OF THE PENIS.

- Simple or syphilitic ulceration of the glans and prepuce, 10, 25, 26, 27.
- Warts, 27, 35.
- Cancer, 24? 28, 29? 30, 34, 38; Series XI. 26.
- Tubercle, 31.

INJURIES AND DISEASES OF THE URETHRA.

Thickening of its walls.

General, 10, 18, 22, 23.

Partial, forming STRICTURE of the Urethra.

Annular strictures, 1, 3, 5, 9, 11, 14, 18.

Strictures by thickening and uniform contraction of a considerable length of the canal, 7, 8, 15, 19, 20.

„ irregular thickening, 6, 12, 16, 21.

Double or more numerous strictures, 22, 23.

Strictures anterior to the bulb, 1, 2, 3, 5, 6, 7, 11, 13, 15, 18, 20, 21, 22, 23, 33.

„ at and posterior to the bulb, 4, 8, 9, 14, 16, 19, 22, 32.

Consequences of stricture.

Dilatation of the canal behind the stricture, 2, 3, 7, 9, 15, 21, &c.

Ulceration at and near the stricture, 2, 5, 8, 12, 13, 16, 21, 32, 33.

Effusion of urine, abscess, and perineal fistula, 2, 5, 8, 12, 16, 21, 33.

Hypertrophy of the bladder, 8, 11, 15, 17, 32, 33.

Inflammation of the bladder, 11, 12, 13, 16.

Formation of false passages, 6, 18, 20.

Ulceration independent of stricture, 10.

Sloughing, 17.

Calculus in the urethra, 11.

1. A PENIS, exhibiting a stricture in the spongy portion of the urethra, about four inches from the external orifice. Half an inch of the length of the canal is almost obliterated; and the tissues around this part are thickened, indurated, and contracted. In the rest of its extent the urethra appears healthy.
2. The anterior part of a Penis, with a stricture in the spongy portion of the urethra, about two inches from the external orifice. Behind the stricture the canal is dilated; its walls also are thickened, and penetrated by an ulcerated aperture which leads into a fistulous passage extending to the integuments.
3. Section of an Urethra, in which there is a stricture in its spongy portion, about two inches anterior to the bulb. The stricture is annular, occupying only a small portion of the length of the urethra: the induration and contraction of the canal being marked by an opaque-white line. The urethra behind the stricture is dilated.
4. Section of a Penis, exhibiting a stricture of the urethra at the junction of its membranous portion with the bulb. The mucous membrane is ulcerated at the seat of the stricture.
5. Section of a Penis, exhibiting a very close stricture in the spongy portion of the urethra, about three inches from the external orifice. Ulceration of the urethra has taken place at the seat of the stricture, and has extended through the indurated tissues around it, and into numerous fistulous passages in the parts between the stricture and the bladder.
6. Part of a Penis, exhibiting a stricture in the urethra, about an inch anterior to the bulb. A false passage has been made by a catheter through the wall of the urethra into the corpus cavernosum, in which it extends for nearly two inches by the side of the urethra and terminates in a large irregular cavity near the bulb. A small calculus is fixed in the dilated orifice of one of the prostatic ducts.

7. Sections of an Urethra and Bladder. There is a stricture of the urethra about three inches anterior to the bulb, and behind it the whole of the urethral canal is dilated. At the fundus of the bladder is a small cyst, formed by the protrusion of the mucous membrane between the hypertrophied muscular fibres.
8. A lateral section of a Bladder and Urethra. A stricture of the urethra, commencing an inch anterior to the bulb, is continued, with general thickening and induration of the tissues, to the prostate gland. In front of the stricture, the canal of the urethra appears to be lost in a small circumscribed cavity, from which five or more fistulous passages lead into the adjacent parts; one of these passages extends to the perineum. The muscular coat of the bladder is hypertrophied. One of the ureters is dilated into a small cyst at its termination.
9. A lateral section of a Bladder and Urethra. There is an annular stricture of the urethra immediately before the bulb. The bladder is large, and its muscular coat is hypertrophied; the fasciculi extending from the ureters to the prostate gland are remarkably developed.
10. A Bladder and Urethra opened from the superior and anterior part*. The mucous membrane of the bladder and urethra is thickened in its whole extent; but no part of the urethra appears especially contracted. Several small ulcerated openings have been formed in the spongy part of the urethra, near the bulb. The cut surfaces of the corpus cavernosum exhibit a sloughing appearance, in consequence of the escape of urine into it. The glans penis has been entirely removed by ulceration.
11. Section of a Bladder and Urethra. A disk-shaped calculus, seven-tenths of an inch in diameter, is fixed in the bulbous portion of the urethra. There is a slight stricture of the urethra immediately in front of the calculus; and around and

* In all cases not otherwise described the section of the bladder and urethra was thus made.

behind it the canal is dilated and superficially ulcerated. The coats of the bladder are greatly thickened. One of the lateral lobes of the prostate gland is enlarged.

The preparation is engraved in Dr. Marcet's "Essay on Calculous Disorders," Pl. v. London, 8vo, 1817.

12. **A Bladder and Urethra.** A large portion of the urethra anterior to the bulb is superficially ulcerated, and two deeper ulcerations extend from this part into the adjacent tissues. One of the openings thus formed communicates with a sac enclosed by the indurated cellular tissue around the urethra. The muscular coat of the bladder is greatly hypertrophied, and its mucous membrane appears thickened and indurated; its cavity was lined throughout by a thick layer of lymph, upon which calculous matter was deposited. The lymph was but loosely connected with the mucous membrane of the bladder, from which it has been separated and reflected in a continuous layer.
13. **A Bladder and Urethra.** There is a stricture in the urethra immediately anterior to the bulb. From the bulb to the bladder the mucous membrane of the urethra is ulcerated in some situations, and in others is covered by fungous growths with calculous matter deposited on them. The bladder is thickened and exceedingly contracted, and its mucous membrane, raised in deep ridges and folds, is superficially ulcerated and nearly covered by calculous matter.
14. **The Cast of an Urethra** in which there was a slight annular stricture immediately behind the bulb.
15. **A Bladder and Urethra.** An inch of the length of the urethra immediately anterior to the bulb is closely contracted. The canal behind the stricture is dilated. The muscular coat of the bladder is hypertrophied; it is half an inch in thickness, and its fasciculi project in strong columns or ridges on its inner wall.
16. **A Bladder and Urethra.** There is stricture in the urethra at

the bulb, and in the anterior part of its membranous portion. The mucous membrane has ulcerated in the situation of the stricture. The mucous membrane of the bladder is thickened and formed into irregular eminences or ridges, which are covered by calculous matter. Ulceration has taken place through the prostate and the adjacent coats of the bladder at its lower and back part; and the aperture thus formed leads to a large irregular cavity resulting from the effusion of urine into the cellular tissue between the bladder and the rectum.

17. A Bladder and Urethra. Sloughing of the urethra has destroyed five inches of its walls, with the adjacent corpus spongiosum. Behind the part which has sloughed, the canal of the urethra is lost in a large irregular cavity, like that of an abscess. A large pouch, formed by the protrusion of the mucous membrane between the muscular fibres, is connected with the front of the bladder.
18. A Penis, with a portion of the Bladder. The mucous membrane of the whole of the urethra is thickened. About two inches from its external orifice, the canal is contracted, forming a close annular stricture, behind which it is dilated in its whole length. From the stricture, a false passage, formed by catheters, is continued along the side of the urethra, in the corpus spongiosum, and through the prostate gland, into the bladder.
19. A Bladder and Urethra. There is a stricture in the urethra about an inch anterior to the bulb. The mucous membrane has been separated from the corpus spongiosum in the situation of the stricture, to show the thickening and condensation which its tissue has undergone at this part. The muscular coat of the bladder is thickened, and the ureters are dilated.
20. A Penis, exhibiting a stricture of the urethra about an inch anterior to the bulb. The mucous membrane is thickened and indurated in the situation of the stricture, and the canal behind it is much dilated. A bristle is introduced into the stricture, and another into a false passage formed by a catheter, which

extends from the front of the stricture for a short distance along the outer side of the urethra.

21. A Penis, exhibiting a stricture of the urethra two inches and a half from the external orifice. Behind the stricture, the whole length of the urethra is greatly dilated; its walls are thickened, and its mucous membrane is deeply folded, and, in parts, superficially ulcerated. There are several small sacs, like the cavities of abscesses, close to the urethra; two of these communicate with its canal near the prostate.
22. An Urethra, the whole of the mucous membrane of which is thickened and indurated. There are, besides, two strictures, one immediately before the bulb, the other about two inches from the external orifice.
23. A Penis, exhibiting two annular strictures of the urethra, one situated about two inches from the external orifice, the other just anterior to the bulb. The mucous membrane is generally thickened, and is in many parts superficially ulcerated.
24. Portion of a Penis, in which the corpus cavernosum is converted, probably by cancerous disease, into a firm substance. The glans penis with a part of the altered corpus cavernosum is deeply ulcerated.
25. A Glans Penis, exhibiting a large ulcer with a ragged irregular surface extending from below into the urethra.
26. Sections of a Penis, in which the glans and a part of the corpus cavernosum have been removed by ulceration.
27. Portion of a Penis, with warts upon the prepuce and the surface of the glans. Previous to the growth of these, the glans appears to have been protruded through an ulcerated aperture in the lower part of the prepuce.
28. Sections of a Penis, in which nearly the whole of the inner surface of the prepuce is covered by a large growth of firm,

apparently medullary, substance. Part of the surface of the growth is ulcerated and shreddy. The glans penis appears healthy, but is compressed by the morbid growth.

29. Sections of a Penis, exhibiting a growth, apparently similar to that last described, from the whole inner circumference of the prepuce. The glans, corpus cavernosum, and urethra are sound, except in one situation where ulceration has commenced upon the surface of the glans.
30. Portion of a Penis, in which a large part of the prepuce, glans, and corpus cavernosum has been destroyed by cancerous ulceration. The elevated, everted, and sinuous margins of the ulcer, and its irregularly indurated base, are strongly marked.
31. Section of a Penis, in which tuberculous matter is infiltrated through the whole of the interior of the corpus cavernosum. On a small separated portion, the fibrous covering has been reflected to show that it is unaltered. The cavity of the vena dorsalis penis is filled with tuberculous matter. The corpus spongiosum and urethra are sound.

From the same patient as the tuberculous kidney in Series XXVI. No. 18.

32. A Bladder and Urethra, exhibiting some of the effects of stricture. A large opening exists in the urethra at the junction of the bulb with the membranous portion: it was formed by ulceration, and through it urine was effused into the perineum. The ulceration involved a stricture which had long existed at this part; the canal of the urethra is of the natural calibre behind the opening. The bladder is contracted, and its muscular coat is hypertrophied.
33. A Bladder and Urethra. There was a stricture of the urethra about two inches from its external orifice. At the situation of the stricture, and immediately behind it, an ulcer nearly half an inch in diameter, has penetrated the wall of the urethra, and permitted the escape of urine into the surrounding tissues. The whole length of the urethra between the ulcer and the

bladder is dilated ; its mucous membrane is thick, rough, and dark-coloured ; and in the membranous portion is superficially ulcerated. The muscular coat of the bladder is hypertrophied ; its mucous membrane is dark, and its surface is covered in many parts with flakes of lymph.

34. The end of a Penis, which was removed from a young man in consequence of extensive carcinomatous ulceration of the glans and prepuce. The borders of the ulcer are hard, elevated, everted, and sinuous ; its base is irregular and covered by granulations.

35. The greater part of a Penis, removed together with a very large, soft, warty growth, which covers all its upper and anterior part, and appears to have originated in the skin and prepuce. The glans and body of the penis are healthy.

Presented by William Slyman, Esq.

36. Sections of a Penis, which was removed in consequence of extensive cancerous disease. In the lower half of the prepuce is a mass of firm cancer two inches in diameter and nearly oval in form. The part of this mass which is near the glans has ulcerated deeply, and the lower half of the glans itself has been similarly destroyed. The remains of the glans and the anterior third of the corpus spongiosum urethræ appeared filled by cancerous substance ; and there is a nearly isolated round mass of cancer in the corpus cavernosum just behind the glans.

From a man seventy-five years old. The disease had been eighteen months in progress. The penis was cut off close to the pubes. A week after the operation the patient died with erysipelas. After death, the inguinal and lumbar glands were found enlarged with cancerous disease : there were several small, white, hard cancerous tumours in the lungs : and pus was deposited in the wrist, elbow, and several other joints, and in the midst of the cancerous glands.

37. A Penis, in which the canal of the urethra is traversed by eleven distinct cords or bands. These bands are flat and narrow, from the eighth of an inch to half an inch in length, and attached at both their extremities to the wall of the urethra. They lay close to the wall of the canal, but are now raised by

portions of glass passed beneath them. They are all situated between the prostatic portion of the urethra and the part about two inches anterior to the bulb.

From a man in whom instruments had been very frequently passed for the cure of stricture.

38. A Prepuce, removed by circumcision and laid open. The boundary between the outer and inner surface of the prepuce is marked by a nearly vertical line along the middle of the specimen. By the side of this line, and covering a large portion of the orifice and inner surface of the prepuce, is a circumscribed oval ulcer, with elevated hard edges, which presented the characters of cancerous ulcers of the skin. The exterior of the prepuce is healthy, except that it is wrinkled and contracted towards the margin of the ulcer.

From a middle-aged gentleman, who had congenital phimosis, and was unaware of the time at which the disease commenced.

SERIES XXXI.

DISEASES OF THE OVARIES AND OVIDUCTS OR FALLOPIAN TUBES.

DISEASES OF THE OVARIES.

Adhesion and displacement, 6, 5; Series XXXII. 13, 30, 33.

Ovarian cysts.

Simple, 3, 7, 13, 14, 19, 21.

Multilocular, 1, 2, 8, 10, 12, 20, 21.

Compound cysts, 2, 8, 18, 20.

Cysts containing fluid, 1, 2, 7, 12, 13, 14.

“ “ fatty matter, hair, and teeth, 3, 8, 9, 10, 13, 22.

“ “ vascular growths from their walls, 1, 20.

“ with bony or bone-like walls, 19, 22.

Hard cancer, 17; Series XXXII. 14.

Melanosis, 16.

DISEASES OF THE FALLOPIAN TUBES.

Adhesion and obstruction, 5, 6; Series XXXII. 13, 30, 33.

Dilatation by fluid (Dropsy of the Fallopian Tube), 4, 5, 15.

Dilatation and rupture in tubal gestation; see Series XXXIII.

Cysts, 11.

1. AN OVARY, of which one half appears healthy, while, in the place of the other half, there are three cysts completely partitioned from each other and mutually compressed. A small wart-like growth is attached to the wall of the lowest cyst.
2. Portion of a large Ovarian Cyst, subdivided by thin membranous partitions into numerous small cavities.

3. An Ovary, in which is a single cyst containing a mass of fatty matter, with stiff, pale hairs imbedded in it.
4. Part of an Uterus, with a Fallopian tube, the end of which, after the closure of a portion of its canal, was distended by a clear fluid into an elongated pyriform sac. A bristle is passed from the uterus along the portion of the tube which retained its natural condition.
5. A similar specimen, showing also a delicate layer of false membrane connecting the posterior wall of the uterus with that of the dilated portion of the tube.
6. An Uterus, with one of the ovaries and Fallopian tubes turned round and adherent to its surface. The Fallopian tube and ovary are themselves closely united by old adhesions. The opposite ovary and the extremity of its Fallopian tube are also similarly connected, but are not adherent to the uterus.
7. A large simple Ovarian Cyst distended and dried.
It was filled by transparent fluid, and was not adherent to the surrounding viscera.
8. Portions of a large Ovarian Cyst, the principal cavity of which contained fatty matter with long slender hairs. Part of the cyst-wall is thick, dense, and irregularly laminated; another part is thin, and on this part a small portion presents a surface like that of ordinary cutis. Portions of fat and hairs are still attached to some parts of the interior of the cyst, while in others, teeth, with well-formed crowns and short fangs, are imbedded.
9. A mass of Fatty Matter and Hair, closely mixed as if rolled and matted together, which was removed from the ovarian cyst last described.
10. Another portion of the same Ovarian Cyst. On its inner surface is an elevation formed by adipose tissue, and covered by a dense layer which exactly resembles human

skin placed on its subcutaneous fat, and presenting on its free surface the orifices of numerous close-set hair follicles. Similar orifices are less closely placed on the adjacent smooth surface of the cyst; and from many of them, both on this surface and on that of the skin-like layer, pale slender hairs, which have well-formed bulbs, project.

The three proceeding preparations were from a lady sixty-three years old, who died shortly after the removal of the cancerous breast in Series XXXIV. No. 4. Case-Book, Vol. i. p. 40, No. 80.

11. Two Ovaries, with their Fallopian tubes. A thin-walled membranous cyst, which contained a transparent fluid, is connected with each Fallopian tube near its fimbriated extremity, but does not communicate with its canal.

12. An Ovarian Cyst, of very large size, and apparently comprising many distinct cavities.

The patient from whom it was taken was tapped eighteen times in two years. The total quantity of fluid withdrawn was 468 pints.

Presented by Dr. Conquest.

13. A simple Ovarian Cyst, removed during life. A bougie is placed in a portion of the Fallopian tube connected with its walls, which are uniformly thin and smooth.

The cyst contained twenty-seven pints and a half of fluid. It was removed after its contents had been evacuated through a small incision in the abdominal walls. The collapsed cyst having been withdrawn from the abdomen through this incision, a ligature was tied round the Fallopian tube and other parts connecting it with the uterus, and it was cut off. The patient completely recovered.

Presented by Thomas King, Esq.

14. A similar Ovarian Cyst, removed after death.

15. A Fallopian Tube, the extremity of which is distended into a pyriform sac, which contained upwards of half a pint of transparent fluid. The rest of the tube is dilated, but in a much less degree, and is elongated and tortuous. The walls of the sac appear to have been very vascular.

Presented by W. T. Rogers, Esq.

16. An Uterus and Ovaries. The ovaries are altered in form; their natural structure is removed, and its place is occupied by a very soft melanotic matter. There are also some small circumscribed deposits of melanotic matter in the peritoneum covering the uterus.

From a young woman in whom melanosis existed in many other organs. The primary tumour is in Series XXXV. No. 23.

17. An Uterus and Ovaries. The place of each ovary is occupied by a large, hard, oval tumour, nodulated on its external surface. The tumours consist of a very dense and hard, obscurely fibrous tissue; and upon the surface, as well as in the interior, of each there are small membranous cysts, which contained a serous fluid. The uterus is healthy.

From a woman thirty-eight years old, whose breast had been removed three years before death on account of hard cancer.

Presented by Richard Allen, Esq.

18. Portion of a large Cyst, which was connected with the ovary of an old woman. The walls of the cyst are composed of several layers of a very dense tissue. Its internal surface is thickly set with groups and masses of small pedunculated and very thin-walled cells, containing a limpid fluid. Its cavity was filled by a thick brown fluid, of the consistence of cream, mixed with numerous short stiff hairs.
19. An Ovary in which there is a small cyst, whose walls, by the deposition of earthy matter, have become bone-like.
20. A portion of a large Ovarian Cyst, with tumours and secondary cysts attached to its inner wall. The walls of the principal or outer cyst are from half a line to a line in thickness, and are composed of a tough fibrous tissue. The two largest tumours within it are oval in form; one measures five inches in its chief diameter, the other three inches; and each of them is attached by a small portion of its surface. Their sections show that they consist of medullary matter, in which are many cells filled with fluid and a gelatinous or mucous substance. There are several other tumours or cysts of small size attached to the

internal walls of the great cyst, and full of fluid or medullary matter.

From a woman about thirty-five years old. The great cyst in which the tumours are enclosed had been several times tapped, and large quantities of serous fluid had been removed. It is probable that the malignant tumours had formed late in the course of the disease; for in the earlier periods, when the cyst was completely emptied by tapping, no solid masses could be felt in it.

21. Sections of two Ovaries. Both of them are enlarged to about four times their ordinary size, and contain numerous round cysts, each from one third to half an inch in diameter, which were full of variously coloured serous and grumous fluids.

The change appears to constitute an early stage of the disease, by which some of the large multilocular cysts of the ovaries are formed. The cysts here shown have the characters of enlarged Graafian vesicles.

22. Portion of Bone, in which an incisor and two molar teeth are fixed in cavities like alveoli. It was imbedded in the wall of an ovarian cyst.

23. Part of a large Cyst connected with an Ovary, and the membranes of some Acephalocyst Hydatids which it contained. The greater part of the cyst is composed of a tough, fibrous tissue; but portions of its walls are as hard as cartilage, and have small plates of bone-like substance in them.

From the same patient as Nos. 215, 216, in Series I.

SERIES XXXII.

INJURIES AND DISEASES OF THE UTERUS, VAGINA, AND EXTERNAL ORGANS OF GENERATION IN THE FEMALE.

DISEASES OF THE UTERUS.

Displacements.

Prolapsus, 35, 30, 31 ?

Inversion, 12.

Obliquity, 38.

Effusion of fibrine, &c. in the cavity, 1, 2, 29.

Enlargement and induration of the cervix, 17, 30, 31, 33.

Enlargement and elongation, 3, 4, 30.

Obliteration of the mouth or cavity, 13, 44.

Fibrous tumours (Hard Fleshy Tubercle), 3, 6, 7, 8, 12, 16, 21, 26, 27, 40, 41.

„ Polypi, 5, 9, 10, 12, 22, 24, 34.

Results of operations on them, 3, 34, 24, 5, 22.

Fibro-calcareous tumours, 4, 25.

Hard cancer? 14, 23.

Medullary cancer, 15, 11, 18, 19, 20.

DISEASES OF THE VAGINA, 18, 19, 20, 23, 35.

DISEASES OF THE EXTERNAL ORGANS.

Enlargement, 36, 37.

Vascular tumour, 28.

Cancer, 39, 42.

EFFECTS OF INJURIES RECEIVED IN PARTURITION, 43 to 48.

1. PORTIONS of Lymph, resembling the tissue of the membrana decidua, which were discharged from the uterus during a painful menstruation.

2. A similar preparation.

3. Section of an Uterus and of a firm fibrous Polypus which has grown from nearly the whole circumference of its neck. A ligature was placed around the polypus near the line of its connexion with the uterus; but the death of the woman took place before the ligature had separated. A portion of glass occupies the groove in which the ligature was tied; and it will be observed that this groove, in a part of its extent, is formed in the substance of the uterus, the neck of which is elongated and almost imbedded in the upper part of the polypus.
4. Section of an Uterus, elongated and distorted by the growth of ten or twelve tumours, of various sizes, in its walls. Most of the tumours are seated just beneath the peritoneal covering of the fundus of the uterus. The largest of them is divided, and exhibits a firm fibrous texture, surrounded by a complete cyst of bone-like substance. Another of the tumours is attached to the fundus of the uterus and to an adjacent tumour, by only a very small pedicle. The substance of the uterus itself appears healthy; its elongated cavity is laid open.
5. A large Polypus, removed by ligature from the uterus. The polypus presents on that side which was attached to the uterus, (and which is placed in front of the preparation), an irregular surface resulting from the process of its separation. On the other side, a section of the polypus displays a firm and fibrous structure, like that of the fibrous tumours of the uterus.
6. Section of an Uterus, with a firm fibrous tumour imbedded in the middle of its anterior wall. The vessels of the uterus are minutely injected; but none of the injection appears in the morbid growth.
7. Portion of an Uterus, with a fibrous tumour imbedded in it. The tumour is of oval form, smooth on its external surface, and composed of a firm, dense, greyish substance, partitioned and variously intersected by white shining bands. It is but loosely connected with the substance of the uterus; they have been partially separated.

8. An Uterus, with two small fibrous tumours. One of these tumours was attached by a small pedicle, which has given way. The other is but slightly fixed to the wall of the uterine cavity, which was dilated round it and in close apposition with its surface.
9. An Uterus, with a transversely oval tumour attached, like a polypus, by a narrow neck, to the fundus of its cavity. The form of the tumour makes it probable that it is composed of two fibrous tumours which were developed in the wall of the uterus, and protruded into its cavity enveloped by a part of the uterine wall which now forms the pedicle or neck attaching them to its fundus. The larger portion of the tumour lay in the vagina.
10. An Uterus, with a very large Polypus attached, by a base of nearly two inches in diameter, to the fundus and side-wall of its cavity, and thence extending into the vagina. Ulceration has taken place on the most depending part of the polypus. The walls of the uterus are dilated and thickened around it.
11. An Uterus, the cavity of which is dilated by a large, soft, broken, and shreddy medullary tumour. The tumour appears to have originated in the walls of the lower parts of the uterus, and has extended from the anterior wall into the bladder; the space between the two organs, as well as a large portion of the cavity of the bladder, being filled by a similar substance.
12. An Uterus, containing a large fibrous tumour which has grown from its fundus and projects into the vagina. The fundus of the uterus is partially inverted, being drawn down by the weight of the tumour. Its inner layers also, enveloping the tumour, are elongated so as to form a pedicle or neck, by which the tumour is attached like a polypus. Similar tumours of smaller size have formed, some near the peritoneal surface, and others in the substance of the uterus. The vessels of the uterus have been injected, and the injection has entered the tumours.
13. An Uterus, exhibiting the obliteration of that portion of its

cavity which is within the cervix. The rest of its cavity is dilated. The extremities of the Fallopian tubes are adherent to the ovaries.

14. An Uterus, of which the cervix has been destroyed by ulceration. The ulceration has also destroyed a considerable part of the vagina and the adjacent portion of the wall of the bladder. The ovaries are uniformly solid and hard.
15. An Uterus, in which the lower two-thirds of the walls are enlarged by the infiltration of a soft medullary substance. The natural texture of the organ can hardly be discerned. The disease forms a large spheroidal mass, of which the lower surface projecting in the vagina is ulcerated and flocculent.
16. An Uterus, the upper half of which is enlarged by the growth of numerous fibrous tumours in its walls. One tumour, larger than the rest, projects into the dilated upper part of the cavity of the uterus, and completely fills it; five others are shown, by the section, imbedded in the anterior wall; and many others project upon the external surface of the uterus. The lower half of the uterus is healthy, but elongated. The walls of the portion occupied by the tumours are thick and laminated, like the walls of the uterus in pregnancy.
17. Part of a Cervix Uteri, removed by operation. It is enlarged and hard, and its surface is nodulated. The os uteri is wide, and irregularly fissured at its sides. A section of the portion removed displays an interior structure which differs little from the healthy character of the uterine tissue.
18. An Uterus, enveloped by a mass of medullary substance with a lobed surface, and with distinct tumours adjacent to it. Ulceration has occurred in the neck of the uterus and in the contiguous part of the vagina.

Presented by Dr. Conquest.

19. An Uterus and Vagina. The cervix uteri and the upper part of the vagina are deeply ulcerated; their remains are soft,

broken, and flocculent, like the surface of a soft medullary tumour in which ulceration has taken place.

Presented by Dr. Conquest.

20. A similar specimen; in which the diseased part presents the circumscribed appearance of a softened and ulcerated medullary growth, and is dark-coloured in consequence either of sloughing or of effusion of blood.

Presented by Dr. Conquest.

21. An Uterus, in the anterior wall of which is a large oval fibrous tumour, which projects both externally and into the uterine cavity. The wall of the uterus surrounding the tumour is very thin.

Presented by Dr. Conquest.

22. A large Polypus, which was removed by excision from the uterus. It is nearly cylindrical in shape, its lower end being very little enlarged; its length is five inches, and its base of attachment was about an inch and a half in diameter.

The patient was a married woman twenty years old. The polypus was first observed after parturition, and was excised ten days afterwards. She recovered speedily and remained well. Case-Book, Vol. i. p. 153, No. 177.

Presented by T. Roberts, Esq.

23. An Uterus, of which the lower half has been destroyed by ulceration, probably of cancerous nature. The adjacent part of the vagina is superficially ulcerated.

Presented by Dr. Conquest.

24. An Uterus, from which a fibrous polypus was removed by ligature eight days before death. A circular ulcer about half an inch in diameter in the fundus of the cavity of the uterus marks the part from which the polypus sloughed. The whole of the tissue of the uterus is swollen.

The patient, a middle-aged woman, died with acute inflammation of the uterine veins.

25. Portions of substance like very hard bone, in coral-like masses, which were deposited in a fibrous tumour of the uterus.

26. Section of a very large fibrous Tumour from an Uterus. One surface of the section is rough and shreddy, having sloughed ; the others show the characteristic structure of the fibrous tumour, a greyish, dense, and tough basis traversed by circling and wavy shining white bands.

Presented by Dr. Conquest.

27. An Uterus, with a large fibrous Tumour in its posterior wall, whence it projects backwards covered by the peritoneal coat of the organ.

Presented by Dr. Conquest.

28. A soft spongy Tumour, which was removed by ligature from the margin of the orifice of a woman's urethra.

29. A thick layer of soft substance, like lymph, which was discharged spontaneously from the inner surface of an uterus.

The patient was a woman thirty years old. She supposed herself pregnant, but no distinct parts of an ovum could be discovered in the substance discharged.

Presented by Prothero Smith, Esq.

30. An Uterus, with part of the Vagina, exhibiting a prolapsus of the uterus, with considerable elongation of its neck and enlargement of the portion which projects into the vagina.

31. An Uterus, of which the body is atrophied and flattened, while the part which projects in the vagina is very large and changed in shape, so as to give the appearance of prolapsus of the uterus.

32. The Labia Pudendi, affected with Cancer. They are both enlarged and indurated. In the left labium, which is the most diseased, the cancer forms an elevated, circumscribed, and superficially ulcerated swelling.

They were removed from a middle-aged woman.

33. The Cervix of an Uterus, removed from a middle-aged woman. It is enlarged and rendered irregular, apparently by the deposit of a firm substance within its tissue. The part which projected in the vagina is superficially ulcerated.

34. An Uterus, with a firm fibrous Polypus attached to the upper wall of its cavity. A ligature was placed around the neck of the polypus eight days before the patient's death. Fatal peritonitis followed. The portion of the polypus below the ligature is intensely congested, and a portion of its surface has sloughed.
- The patient, an elderly woman, had been greatly reduced by hemorrhage from the polypus previous to the application of the ligature.
35. A vertical antero-posterior section of an Uterus, and of the peritoneal pouches between it and the bladder and rectum, from a case of prolapsus uteri with eversion of the vagina. The os uteri was protruded beyond the labia. Its cavity is elongated. The pouches of peritoneum are very deep, and contained portions of the small intestines which were protruded in them as in a hernia. A bristle is placed in the right ureter.
36. A Nympha removed from a middle-aged woman. It is enlarged so as to form a deeply lobed spheroidal mass, with a wrinkled and warty surface, between three and four inches in diameter. A section of it shows that it is composed of a firm, compact, and elastic tissue, like skin infiltrated with serous fluid.
37. A large mass of substance, like that last described, very deeply lobed, which was removed from a clitoris. It probably had its origin in enlargement of the preputium clitoridis.
38. An Uterus, with the adjacent parts. There has been inflammation of the pelvic portion of the peritoneum, and irregular adhesions have formed about the ovaries, Fallopian tubes, and broad ligaments. The left broad ligament is much contracted, and the body of the uterus is thus drawn to the left side, so that its axis is almost at a right angle to that of the vagina.
39. A Clitoris, enlarged into a mass nearly two inches in diameter, by the growth of firm, pale, and obscurely fibrous substance, with closely woven glistening bands. In the interior of the growth are several cavities or cysts of irregular forms, nearly filled with groups of small bodies attached by narrow pedicles to the internal surfaces of their walls.

40. Section of a large fibrous Tumour, removed after death from an uterus, and exhibiting in its interior a cavity formed by softening of its substance. The cavity contained a serous fluid, and is bounded by the soft and rather flocculent tissue of the tumour.
41. An Uterus, in the posterior wall of which a large, nearly spherical mass is imbedded, and appears to be composed of a crowd of fibrous tumours closely connected. In the middle of the mass is a narrow space or fissure, the walls of which are formed by the tumours, and of which a part of the cavity is filled by a tumour projecting into it from the side. At the lower part of the mass a portion of the uterine wall is shown extended over its surface: its posterior surface is completely covered by peritoneum, beneath which some of its component tumours appear prominent.

The patient was a delicate and unhealthy woman thirty-eight years old. Menorrhagia had existed for seven years, and had been excessive for the year before death. Case-Book, Vol. i. No. 218.

Presented by Dr. Rigby.

42. A Labium, on the surface of which is an oval, elevated, warty growth, of moderately firm texture, and with a finely granulated surface, very similar to the chimney-sweepers' cancer of the scrotum.
43. A Vagina and Rectum, with the external organs of generation. The whole circumference of the uterine extremity of the vagina is soft and flocculent, having sloughed in consequence of the long-continued compression between the head of the child and the brim of the pelvis to which it was subjected during a tedious parturition.

Presented by Dr. Conquest.

44. An Uterus, with the upper part of the Vagina, and the urinary bladder. In consequence of injury received in parturition, a large oval communication exists between the vagina and the neck of the bladder. The margins of the opening in the bladder are close to the orifices of the ureters, through which bristles are passed. The os uteri is obliterated.

45. An Uterus and Vagina, with a portion of the Rectum. Six weeks before death the upper part of the vagina was torn during parturition. A long arched rent through the posterior wall of the vagina and a portion of the neck of the uterus still exists, and exhibits no appearance of granulations. Other smaller lacerations of the mucous membrane of the vagina are seen by its sides. A band of lymph extends from the vagina to the rectum.

The patient was a woman twenty-five years old. In two previous labours she had been delivered with the help of instruments. The laceration here shown occurred twenty-eight hours from the commencement of her third labour. She was again delivered with the help of instruments. Peritonitis followed, in which she gradually sank. The case is described by Mr. Birch, in the *Medico-Chirurgical Transactions*, Vol. xiii. p. 357, London, 1827. Case-Book, Vol. i. p. 120, No. 143.

46. An Uterus and Vagina. During parturition, the vagina was torn through half its circumference close to the part connected with the uterus.

Presented by Dr. Conquest.

47. An Uterus, the neck of which was torn through two thirds of its circumference, during parturition.

The child, in this case, was born with hydrocephalus. Its skeleton is in the Museum. Death ensued shortly after the rupture of the uterus.

Presented by Dr. Conquest.

48. A Pelvis, in which separation of the sacro-iliac and pubic symphyses occurred to an extent sufficient to permit the free movement of the several bones upon each other. The cavity of the pelvis is small, especially in the antero-posterior diameter.

From a woman about forty years old, who died in her second labour with rupture of the vagina and uterus.

SERIES XXXIII.

DISEASES AND DISPLACEMENTS OF THE OVUM* AND ITS MEMBRANES.

Displacements of the ovum; extra-uterine gestation.

Tubal, 13 to 18.

Abdominal, 8.

Cystic or hydatid disease of the chorion, 11, 12, 19.

Thickening and opacity of the amnion, 3.

Extravasation of blood, and other diseases, in the placenta and decidua, 1, 6, 7, 9, 10.

Blighting, or removal of the embryo, 2, 4, 5, 10.

1. AN OVUM, which was expelled at an early period of gestation. The fœtus, about three-quarters of an inch in length and well formed, is suspended by its umbilical cord, which appears to have been unnaturally infiltrated. The placenta is large and firm, and its inner surface is deeply lobed and nodulated: a section shows a similar lobulated arrangement within it.

2. AN OVUM, in which a short small umbilical cord is shown, but in which no embryo could be found.

Presented by Dr. Conquest.

3. AN OVUM, which was expelled in an abortion. The decidua and chorion together form a tough, thin, coarsely-granulated layer.

* The examples of intra-uterine disease, inducing malformation of the fœtus, or affecting the fœtus alone, are placed in another division of the Museum.

In the place of the placenta there appear only two distinct round masses, apparently of some firm substance, which project into the cavity of the amnion. The amnion forms a thin but dense and opaque layer of membrane lining these projections and the whole inner surface of the ovum. The umbilical cord is small and attached to one of the projections. The embryo is nearly two inches long, and well formed; but all its parts appear united, as if by thickening of its amniotic covering, or as if a layer of false membrane had been thinly deposited and organized on its surface, so as to envelope it with a nearly smooth covering.

4. Portion of a diseased Ovum, with the Vesicula Umbilicalis.

It was expelled from a patient who thought herself in the sixth month of her pregnancy, but in whom no enlargement of the uterus had taken place for several weeks before the abortion. In twenty-four hours after the expulsion of this ovum, a dead fetus, of about four months, with its membranes complete, was expelled; showing that the parts preserved must have belonged to another fetus which had died at a much earlier period.

Presented by Dr. Rigby.

5. The Membranes of an Ovum at about the eighth week of gestation. The vesicula umbilicalis, with its vitellus, is seen at the upper part, and a portion of the umbilical cord below.

Presented by Dr. Rigby.

6. A diseased Ovum, at the seventh or eighth week of utero-gestation, showing the early formation of a Mole. The decidua is distinctly seen on the outer surface, and the amnion on the inner surface, of the mass. The thickness of the mass, which is in several parts nearly half an inch, is probably due to the extravasation of blood among the radicles of the chorion, as shown by the section of the lower part of the preparation.

Presented by Dr. Rigby.

7. A diseased Ovum, at the ninth or tenth week of utero-gestation. The decidua is reflected, but in other respects this ovum presents nearly the same circumstances as are shown in the preceding preparation. The quantity of extravasated blood, however, is larger, and the mass has in consequence a distinctly lobulated form.

8. One of the Lower Limbs of a Fœtus of mature growth, which was contained in an osseous cyst, and remained in the abdomen of the mother for fifty-two years. A portion of the cyst is connected with the limb; their surfaces were closely adherent, but have been partially separated. The several tissues of the limb are dry and compressed, but are of healthy structure.

The patient was eighty years old when she died. Fifty-two years before, she had signs of pregnancy, and then of labour for the delivery of this child; but the latter passed off at the end of a week. She continued very weak for three months; but from that time till she was affected with gangrena scnilis, she had good health. The case is described by Dr. Cheston in the *Medico-Chirurgical Transactions*, Vol. v. p. 104. London, 1814. Other portions of the same fœtus are in the Museum of the Royal College of Surgeons of England.

9. A Placenta, which was separated from the uterus in an abortion about the middle period of gestation. Its substance is unnaturally firm, and its foetal surface is deeply and irregularly lobulated.
10. An Ovum, which was expelled in an abortion between the third and fourth months of gestation. As in the preceding specimen the placenta is very firm, and its foetal surface is deeply lobed and knotted. The fœtus, about three inches long, is well-formed. A bristle is passed behind the umbilical vesicle and the omphalo-mesenteric duct. Just above the duct a small body, supposed to be another fœtus blighted, is attached to the membranes.
11. An Hydatid Mole; a large mass formed by clusters of small pellucid cysts or vesicles singly attached to very slender branching cords. At the upper part of the specimen are portions of thin membrane, like an amnion, by which the several clusters of cysts were connected.

Presented by Dr. Conquest.

12. A similar specimen; with which there is also connected a thick mass of firm substance, like some of the preceding examples of decidua or placenta infiltrated with blood.
13. An Uterus, with the Ovaries and Fallopian tubes. The middle of the left Fallopian tube was dilated by an ovum. The dila-

tation is laid open, and the chorion and other parts of the ovum are shown. The uterus is slightly enlarged, and its cavity is lined by a substance like decidua. There is a simple cyst in the right ovary.

Rupture of the dilated portion of the Fallopian tube took place in the seventh week of gestation, and the patient died of hemorrhage.

14. A similar specimen, in which, as in the preceding case, death was the result of hemorrhage from the ruptured Fallopian tube in the seventh week of gestation. The middle of the right Fallopian tube is dilated into a sac which contains the foetus and its membranes. In one side of this sac is a small lacerated opening, through which the flocculent chorion protrudes. From this opening a gallon of blood was discharged into the cavity of the abdomen. On its other side, a large portion of the sac has been removed to display the foetus and membranes. The outermost membrane enclosing the foetus has all the characters of decidua. Besides this membrane the amnion and chorion were distinct. The foetus and umbilical cord are also perfect. The right ovary contains a large corpus luteum, distinguishable by its circular form and yellowish colour. A bristle is passed through the aperture in the ovary from which the ovum escaped. There is also a large cyst in this ovary which contained a watery fluid. The cavity of the uterus is lined throughout by a perfect and thick decidua. Bristles are passed through it into the uterus. A bristle is also passed through the Fallopian tube into the dilated portion of it which contains the foetus and its membranes.
15. Portion of the broad ligament of an Uterus, with the Fallopian tube and ovary. In the middle of its course the Fallopian tube is distended by the development of an embryo within it. On the surface of this part there is a small irregular aperture, through which fatal hemorrhage into the abdomen took place. The ovary is large; at its lower part is a very large corpus luteum with a central cavity.

The patient, in the seventh week of her tenth pregnancy, was suddenly seized with pain in the situation of the Fallopian tube, and signs of internal hemorrhage, and died in ten hours. Case-Book, Vol. i. p. 142, No. 166.

Presented by Dr. Conquest.

16. An Uterus, with the Fallopian tubes and ovaries. A foetus has been developed in the right Fallopian tube close to the uterus, till it has attained a length of between three and four inches. The placenta and the several membranes of the ovum appear to be well formed. The uterus is covered by coagulated blood, effused probably from the ruptured Fallopian tube.
17. A similar specimen, in which the foetus, contained in the left Fallopian tube, is yet further developed, and measures between five and six inches in length. Both it and its membranes are well formed.
18. A similar specimen, in which death occurred in the third month of gestation. The middle of the left Fallopian tube, which contained the foetus, is dilated into a large sac. On one side of this sac is a lacerated opening, through which the foetus escaped into the cavity of the abdomen, and to the edges of which the membranes of the foetus remain attached. The left ovary contains a corpus luteum. The cavity of the uterus is lined by decidua.

Presented by Dr. Bull.

19. An Ovum, expelled in the second month of gestation, in which many parts of the chorion exhibit the same change as is shown in Nos. 11 and 12,—small pellucid vesicles suspended on slender cords. Other parts of the chorion, as well as the decidua and amnion, appear healthy.

Presented by Dr. Rigby.

SERIES XXXIV.

DISEASES OF THE BREAST*.

- Simple cysts, 1, 3.
Cysts with solid growths from their walls (Scro-cystic Sarcoma), 1, 7, 16, 21, 19, 20.
Fibro-cellular tumours, 2, 11, 22, 23, 18, 17, 5 ? 8 ?
Fibrous tumours, 24, 25.
Cartilaginous and osseous tumours, 13.
Scirrhus, or hard, cancer, 4, 14, 16, 17, 12.
Medullary tumours, 6, 9 ?
 Melanosis, 10.
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1. A BREAST, with two cysts imbedded in the mammary gland.
The walls of the cysts are thin and tough ; their inner surfaces are coarsely wrinkled ; they communicate by a small aperture. The interior of the smaller cyst is rust-coloured, as if it had contained a bloody fluid. The larger cyst was distended by a watery fluid, and a lobulated growth of soft substance has arisen from a part of its inner wall.
2. Section of a Tumour, which weighed eight pounds and occupied the situation of the mammary gland. The outer surface of the tumour is uneven, knobbed, and appears to have been loosely

* In all cases in which the contrary is not stated, it is the female breast which is the seat of the disease described.

connected with the adjacent parts. Its section shows that it is composed of a light grey, semitransparent substance, compact and glistening on the cut surface, and variously intersected by slender bundles of fibres. A few small cysts, with polished internal surfaces, are scattered in the substance of the tumour; and at the lower part of the section are appearances as if such cysts had been filled by lobulated growths from their walls.

3. Portion of a Mammary Gland, in which is imbedded a simple thin-walled cyst, with a smooth and polished internal surface. The cyst was filled with a clear fluid.
4. Sections of a Mammary Gland and the surrounding fat, in which an irregular mass of scirrhous or hard cancer is imbedded. The morbid structure presents a very hard, dull greyish basis, intersected by short bands, like fibres interwoven in a close irregular network. Some of these bands have a yellowish aspect, and on the surface of the lower section portions of the adipose tissue of the breast are seen enclosed within the cancerous substance. A few small cysts also are contained within it. The surface of the morbid structure is intimately adherent to the surrounding tissues, and, at one part, can scarcely be distinguished from them.

The patient was sixty-three years old. Her mother, sister, and another relative had died with cancer of the breast. She died four days after the operation, with abscess under the sterno-mastoid muscle. Parts of a large cyst in one of her ovaries are preserved in Series XXX. No. 8, 9, 10. Case-Book, Vol. i. p. 40, No. 80.

5. A Tumour, with a portion of skin, removed from a breast. The tumour is nearly spherical, and appears to have been slightly connected with the surrounding parts. It is of pale, firm, and uniformly close texture, and is intersected by fine undulating fibres, like partitions imperfectly dividing it into lobes.

Presented by Dr. Conquest.

6. A Tumour removed from a breast. It consists of a close-textured medullary substance, and in its lower part were small cells full of blood.

7. Part of a Breast, in which a cyst, with rather thick tough walls, is imbedded in the mammary gland. A round lobulated mass of soft substance has grown from a portion of the inner wall of the cyst: the rest of its cavity was filled with serous fluid.

8. Sections of a Tumour removed from the breast of an old woman. Its structure appears similar to that of No. 5.

It had grown very slowly.

9. Sections of two tumours. The largest tumour occupied the situation of the mammary gland: it is an oval mass, with a smooth external surface, and formed of a pale, uniformly firm substance. The smaller tumour seemed to be formed by enlargement and change of structure of the axillary lymphatic glands. It consists of the same kind of substance, but presented a distinct portion of a dark brown colour and of a very soft texture, like a mass of medullary substance with blood effused in it.

From a girl sixteen years old.

10. Section of a Mammary Gland, exhibiting the deposit of melanoctic matter, both in small round masses and in a more diffused form.

From a young woman in whom there were similar deposits in several other organs. The primary disease is in Series XXXV. No. 23.

11. A Mammary Gland, with two tumours imbedded in it, which were removed by operation. Each tumour is circumscribed and surrounded by a distinct capsule of cellular tissue. The substance of each tumour appears to consist of separate portions loosely connected by cellular tissue, which in the recent state resembled the lobules of the pancreas. The arrangement of the lobules indicates that they are growths (such as are in Nos. 1 and 7) which have arisen from the walls of numerous cysts, and have now filled their cavities, become firm, and coalesced with the cyst-walls so as to form a nearly solid mass.

12. Section of a Breast and of a small hard Cancer situated just below the nipple. The part of the tumour nearest to the skin

has softened, and exhibits on its section a small irregular cavity which was full of grumous semifluid substance. There are smaller and less completely softened spots in other parts of the tumour. The skin and other tissues are healthy; but the nipple is retracted.

From a lady between forty and fifty years old. The disease returned before the wound of the operation had completely healed.

13. An oval nodulated Tumour, consisting of a mixture of cartilage and bone, which was removed from the mammary gland of a bitch.
14. Section of a Breast and of a large hard cancerous Tumour imbedded in it. The nipple is retracted to the surface of the tumour, and appears sunk in a deep pit in the integuments of the breast. The cancerous structure exhibits a pale dull-greyish basis, shaded with light pink, and intersected in every direction by short wavy lines, like bundles of white fibres, which mingle together in a close irregular network. This fibrous structure is most distinct about the centre of the mass; its exterior appears more homogeneous: its whole substance was almost incompressibly hard. The surface of the tumour is closely united to the surrounding tissues: its outline is irregular, small lobes extending from its surface into the adjacent fat.

From a woman sixty years old.

15. A Breast in which a hard Cancer is situated in the part of the mammary gland near the axilla. The disease forms a small, nearly globular mass, presenting, though less distinctly, the same characters as the preceding specimen. Above the breast, two lymphatic glands are suspended, which were removed from the axilla; they are indurated, and parts of their substance have the appearance of cancer.

From a woman thirty years old.

16. A Breast removed from a middle-aged woman. The situation of the mammary gland is occupied by a large cyst, which contained a serous fluid, and around which the gland is spread out. The walls of the cyst are about a line in thickness, tough, but

pliant: its interior is irregularly wrinkled, and somewhat sacculated; a small soft lobulated growth projects from a portion of its wall into its cavity. Above this cyst, (at the part of the mammary gland which, during life, lay near the axilla,) is a small oval mass of hard cancer, with irregular cavities, the result, apparently, of its partial softening.

The patient died, some time after the removal of the breast, with a return of the cauceros disease.

17. Part of a Breast, in which the mammary gland contains two distinct tumours. One is a small round circumscribed mass, separated by a distinct capsule from the surrounding tissues, and consisting of a firm, elastic, pale substance, with white undulating lines forming imperfect partitions in it. At one portion also it presents the appearance of lobulated growths, filling small cysts; as in Nos. 2 and 11. The other tumour is a smaller and rather flattened mass, intimately united to the parts around it, very hard, greyish, densely and intricately interwoven with fibres.

The patient was a woman forty-two years old. The first described, fibro-cellular, tumour, had existed four years; the other, a hard cancer, had existed four months, and was growing slowly to the time of the removal of the breast.

18. A portion of a very large Tumour, which was removed with a woman's breast. It is composed of an elastic, tough, white, homogeneous substance, arranged in closely connected lobes, and formed of fine fibro-cellular tissue, with compactly and irregularly woven filaments. The whole tumour was of an oval form, and weighed seven pounds.

The patient was between thirty and forty years old. The tumour had been growing thirteen years, and produced little inconvenience, except by its weight. She used to sit with the breast resting on her knees, till the integuments began to slough. The mammary gland lay under the tumour, and appeared healthy. The patient recovered completely after the operation. The rest of the tumour is in the Muscum of the Royal College of Surgeons.

19. Section of a woman's Breast, and of a Tumour seven pounds in weight, of which a part protruded through the ulcerated skin. The lower part of the tumour presents a section of a large cyst, with thick soft succulent walls, which contained a pale yellowish fluid. Above this, the substance of the tumour is soft, elastic,

somewhat glistening and jelly-like: the greater part of it protruded through the skin in the form of a deeply lobed and very vascular mass, the surface of which was covered by healthy-looking granulations and appeared to be in parts *skinned over*. The appearance of the tumour had been altered by a ligature tied round the base of the protruded part some time before it was removed; it is from this that the margins of the protrusion appear to overhang so far the surface of the surrounding integuments.

20. Section of a Tumour, with part of the integuments, removed from the same patient as the specimen last described. The characters of the tumour are very like those of the more solid portions of the preceding, pale yellowish, soft, glistening, and almost gelatinous.

The patient, at the time of the second operation, was thirty-seven years old. The tumour first removed had been growing, with very little pain, for thirteen years, and did not interfere with lactation. When, at length, it grew very large, the skin over it became livid, and pointed. It was opened, and a large quantity of coffee-coloured fluid was discharged, shortly after which a solid vascular growth protruded from the opening. This growth soon attained a large size, and was cut off; it again increased, and a ligature was placed round its base, which produced so much pain that the patient came to the hospital; and the whole mass, with nearly all the mammary gland, was removed. The patient remained well for nearly two years, when the tumour, No. 20, appeared, and increased rapidly. She recovered, and was in good health shortly after its removal.

21. A Breast, in which a Cyst is imbedded in the mammary gland. The cyst has the same general characters as those in Nos. 1, 3, and 16, but its cavity is almost filled by a soft, lobulated, and vascular growth attached by a broad base to a large portion of its wall. It is loosely connected with the adjacent parts. The mammary gland is very small.

The breast was removed from a woman forty-nine years old. The cyst had been increasing slowly and with very little pain for between four and five years. She recovered from the operation.

22. A small Tumour removed from the Breast. It is of oval form, nodulated on its surface, and invested by cellular tissue forming a distinct capsule. It is composed of a soft, elastic, semitransparent, glistening substance, traversed by opaque-white undu-

lating fibres, of which the larger appear on the section to form partitions dividing it into several round masses.

From a woman twenty-five years old, in whom it had been growing two years, and had occasionally been the seat of severe pain.

23. A small Tumour removed from the Breast. It has the same external form and investment as the last-described; but its substance is tough, elastic, nearly opaque-white, appearing obscurely and very closely filamentous. There is a small smooth-walled cavity in its centre; and it is, like the preceding, incompletely partitioned.

From a married lady thirty-six years old, in whom it had grown slowly, and almost without pain, for four years.

24. Section of a Breast and of a large Tumour developed in the mammary gland. The tumour is spheroidal in form, and nearly three inches in diameter. It is composed of a very firm, compact, greyish substance, traversed by numerous undulating white fibrous bands; and it closely resembles, in minute as well as in obvious structure, the common fibrous tumour of the uterus. It is connected by loose cellular tissue with the substance of the mammary gland, which is pressed aside but appears healthy.

25. A Tumour, exactly resembling in its structure that in No. 24. It separated by sloughing from the breast of the same person.

The patient was an unhealthy woman forty-seven years old. The tumour in No. 24 had existed many months, and, after an accidental blow, had grown fast and with much pain for seven weeks before the removal of the breast. About three months after the operation, when the wound had been long healed, the tumour in No. 25 began to grow under the cicatrix. It increased rapidly, and in about three months, the integuments over it having ulcerated, it was completely separated by sloughing. The cavity left by its separation ulcerated widely and deeply, assumed the characters of a great cancerous ulcer, and the patient died exhausted nine months after the removal of the tumour. Hard white tumours, of cancerous appearance, were found in the lungs. Some of them are in Series XIV. No. 43; and part of the patient's stomach is in Series XV. No. 24. Case-Book, Vol. i. p. 151, No. 175.

SERIES XXXV.

TUMOURS AND OTHER ALLIED MORBID GROWTHS.

[The references to the specimens in the following Series are included in the index to the illustrations of General Pathology, which is inserted in the Introduction to the Catalogue.]

1. PORTION of the upper part of a Skull, with several large lens-shaped tumours developed between the pericranium and dura mater, and partially involving the intermediate substance of the bone. The tumours are composed of a soft, but close-textured, smooth, medullary substance, which on its cut surface is obscurely fibrous, as if in each tumour there were fibres set vertically upon the surface of the bone to which it is attached.
2. A large oval Tumour, composed of an uniform, pale, and very dense substance, glistening like cartilage. It was removed from the posterior mediastinum.
3. Section of Skin and Subcutaneous Tissue, taken from the inside of the arm, with a portion of the Median Nerve from the same limb. The subcutaneous tissue forms a layer upwards of an inch in thickness, of very firm, hard, and brawny substance, in which are appearances of close-set, brownish tumours. The surface of the skin is in some situations elevated in a tuber-

culated form by the subjacent tumours and indurated tissue ; and at the lower part of the specimen is a deep irregular ulcer with elevated and everted edges. Part of the median nerve is indurated and changed in texture, in the same manner as the subcutaneous tissue.

4. Section of a Tumour removed from the axilla. It is composed of a soft, grumous, medullary substance, arranged in a congeries of nearly distinct round masses, each of which is thinly invested by membrane, and in many of which blood is copiously effused. The whole tumour is enclosed in a fibro-cellular capsule, to the lower part of which the axillary artery, vein, and plexus of nerves are attached. In a portion of skin connected with the surface of the tumour is a cicatrix, marking the situation of an operation which had been performed for the removal of the diseased structure.
5. Sections of a large Tumour, consisting of cartilage with specks and lines of bone interspersed in it. The greater part of it presents a nodular arrangement.
6. Portion of a Femur, dried, with the surrounding muscles, among which, and with a slight attachment to the bone, the tumour last described had grown. Some pieces of the tumour, more completely ossified, remain imbedded in the intermuscular tissue.
7. Cutaneous Cysts, which were removed from the scalp. Their walls are thick and firm, and they contain a thick, pale, grumous substance.
8. A Fore-arm and Hand, with a great mass of nearly distinct, soft, and very vascular medullary Tumours around the bones. The surface of the mass is lobed and ulcerated. The bones themselves are sound.
9. Section of a Foot and of a large fibrous Tumour, which occupies nearly the whole of the sole, and is attached to the periosteum of the bones of the tarsus and metatarsus. It consists of a

very firm, pale yellowish substance, intersected by wavy white fibres and bands.

The tumour was removed from a nobleman thirty-five years old. An enlargement of the sole had been observed thirty years. Numerous unsuccessful attempts were made by Mr. Pott, Mr. Hunter, and others, to reduce its size. Its great weight and the pain attendant on the latter periods of its growth at length induced the patient to submit to its removal. Amputation of the foot was performed by Mr. Langstaff, and the patient recovered. The other half of the foot is in the Museum of the Royal College of Surgeons of England.

Presented by George Langstaff, Esq.

10. Section of a Tumour which occupied the whole arm and shoulder. The section consists of a slice taken out of the middle of the tumour. A portion of the shaft of the humerus is destroyed; the head and upper part of the bone are imbedded in the tumour, which is also closely attached to the lower border of the scapula. The inferior angle of the scapula projects through an ulcerated aperture in the skin, in a state of necrosis. The greater part of the tumour is formed of a very firm, close-textured, and obscurely fibrous substance, glistening on its cut surface, and in general appearance resembling fibro-cartilage. Portions of it are much softer, broken, and mixed with blood effused in them. In many of the firmer parts small deposits of bone have taken place. The head of the humerus is dislocated from the glenoid cavity, which is filled by part of the softer portion of the tumour.

Cast of the limb from which this preparation was taken, No. 5.

11. A large, flat, lobulated, fatty Tumour, removed from the thigh. In the centre of the tumour is an irregular mass of substance like bone.
12. Portion of an upper Lip, which was removed by operation. A section shows the edge of the lip converted into a white and hard, probably cancerous, substance.
13. Two Cysts which contained a soft white substance, partly of the consistence of honey, and partly disposed in flakes, like scrapings of spermaceti. The walls of the cysts are dense and strong. They are everted to show their internal surfaces, which are white and polished.

14. Section of a Tumour removed from the thigh. It consists of cells or cysts, of various form and size, filled with blood, and separated by a soft medullary substance of a brownish-yellow colour and obscurely fibrous texture. In the upper part of the specimen are some cells distinct from the rest, which were seated in the adipose tissue of the limb. On the integuments covering the tumour there is a small tubercular elevation at one part, and at another an ulcerated opening.

The patient was a woman forty-five years old. The tumour had been growing three years without pain, but with much impairment of health. Blood, sometimes as much as a pint at a time, was discharged twice or thrice a week from the ulcerated surface of the tumour. The other half of the tumour is in the Museum of the Royal College of Surgeons of England.

15. A Cyst, removed by operation from beneath the skin covering the scapula. It contained masses of grumous and granular fatty matter, some of which are still adherent to its internal surface.

16. A Tumour which was removed from the space between the ramus of the jaw and the ear. It was in part imbedded in the parotid gland, small portions of which, together with several branches of the facial nerve, were removed with it and are attached to its surface. The tumour consists of a white, firm, and granulated substance, invested by a distinct thin capsule.

17. A Tumour, which was found loose in the cavity of the abdomen. It consists of a very hard and compact laminated substance, like fibro-cartilage, with deposits of earthy matter in its centre.

Presented by Thomas Hott, Esq.

18. Sections of two Melanotic Tumours which were removed from the walls of the abdomen. The lower tumour, consisting almost entirely of a soft black substance, occupied the situation of a nævus, and was removed by operation. The upper one, consisting of a pale brownish medullary substance, spotted with melanotic deposits, grew from the cicatrix formed after the removal of the other.

The patient was a man fifty-nine years old. The first tumour seemed to have its origin in a mole, which had undergone no change from birth till about a year

before death. It then enlarged, became dark brown and firm, ulcerated superficially, and discharged fetid ichorous fluid. It was removed, together with several small dark growths which had formed around it, and the wound healed; but in six weeks the tumour was reproduced from the cicatrix, and other small growths again formed in and beneath the skin around it, and increased in number, till in two months they amounted to at least forty, and extended from one ilium to the other, "like a large bunch of dark coloured grapes." At the same time, other tumours appeared near a mole on the sternum, and on the sides and back of the trunk, the scalp and forehead. At length, gradually increasing dyspnoea and cough came on, and were followed by general dropsy, under which the patient sank within a year from the first increase of the mole. After death, numerous melanotic growths or deposits were found in the heart (a part of which is preserved in Series XII. No. 46), in some of the bones, in the periosteum, the mesenteric glands, pancreas, liver, kidneys, and lungs.

The father of this patient died with numerous small tumours between the shoulders; and his children and brothers, as well as his father, had many moles on various parts of their bodies.

A further account of the case is given by Dr. Norris, in the *Transactions of the Provincial Medical and Surgical Association*, Vol. iv. p. 437, London. 1836.

Presented by Dr. Norris.

19. Section of a Large Tumour, which formed within the labium pudendi. It consists throughout of a tough and compact substance, with closely interwoven fibres, like indurated cellular tissue.

The tumour was removed from a lady twenty-eight years old. It had been observed four years; it had given no pain, and interrupted no function, though it was twice as large as an adult's head. It commenced its growth at the lower part of the left labium, and extended gradually along the buttock, and over the os coecygis. It formed a pendulous mass rather broader than the two thighs. In removing it, the anterior portion of the tumour was found to extend along the side of the vagina: it was cut off, and a portion was left behind, which again grew to a mass about one third of the size of that which was removed. A second operation was therefore performed two years after the first; and the whole tumour being extirpated, the patient completely recovered. She remains well to this time, eighteen years after the second operation. The case is related by Mr. Lawrence, in the *Medico-Chirurgical Transactions*, Vol. xvii. p. 11, London, 1832. Case-Book, Vol. i. p. 104, No. 135.

20. Section of a Tumour, with a portion of skin, removed from the front of the abdomen. The tumour consists of a uniform pale firm substance, which contained a large quantity of highly albuminous fluid
21. Portions of a Nævus, which were removed from the inside of the cheek of a boy fourteen years old. In the upper portion a

section of the *nævus* is made, showing the consolidation which its structure had undergone from repeated attacks of inflammation. With the middle portion, an inch and a quarter of the parotid duct are connected. A bristle is passed through the duct. On this portion a multitude of fine fringe-like processes, have been formed by the enlargement of the papillæ of the mucous membrane of the cheek. No inconvenience followed the removal of the piece of the parotid duct.

22. Portion of an Upper Lip with an oval, nodulated, cancerous ulcer on its edge.

Removed from a man sixty years old.

23. Section of a Tumour, which was removed from the back of a young woman. The exterior of the tumour is lobulated, and its margin projects far beyond its base of attachment. Its surface is covered, apparently, by a thin layer of indurated skin. Its interior consists of a moderately firm, and obscurely fibrous substance, incompletely partitioned into small round masses or lobes, and is in some situations of a dark brown, in others of a black colour. At the base of the tumour the subcutaneous fat presents small isolated portions of melanotic substance; and many others were dispersed in the cellular tissue for some distance around. The vessels supplying this tumour were large, and bled profusely in the operation.

The patient was a woman between twenty and thirty years old. The tumour had its origin in a mole or dark *nævus*, but had not grown rapidly till shortly before it was removed. About two years after the operation she died with melanotic deposits in nearly every organ. The bones in Series I. No. 190—192; the dura mater, VI. 55; the portion of liver, XVIII. 26; the ovaries, XXXI. 16, and the mammary gland, XXXIV. 10, were taken from her body.

24. The lobules of the Ears of a young woman. Within each lobule there is a nearly spherical fibrous tumour, over which the integument is tightly stretched. A section of one of the tumours displays a dense pale fibrous texture. Above these is a small tumour of the same kind, which was reproduced in the cicatrix formed after the excision of one of the lobules.

The tumours began to grow shortly after the patient began to wear ear-rings. The tumour last-mentioned was removed a few months after its first appearance.

Presented by J. H. Holberton, Esq.

25. A Cyst, with thin tough walls, which was removed from beneath the tongue. It projected into the mouth, and extended so far downwards as to be prominent in the front of the neck. Its contents are a firm grumous and granulated suet-like substance.
26. A layer of false Membrane formed upon the surface of the Pleura. Numerous small yellow masses of soft tubercle are imbedded in the false membrane, and in the adjacent thickened portion of the pleura. The vessels of the false membrane were injected through the pulmonary vein.
27. Portion of the peritoneal and muscular coats of a Jejunum, dried after the minute injection of the bloodvessels. Numerous small, oval, flattened masses of yellowish tuberculous substance are scattered in the subperitoneal tissue.
28. A large Tumour, with the surrounding skin, removed from the front of the chest of a middle-aged lady. The section of the tumour shows that it is composed of a soft but compact, pure white, brain-like medullary substance, with blood diffused through its lower half.

In the course of eleven years preceding the removal of this tumour, three similar operations had been performed on the same lady. At the first operation, the part removed appeared to be a simply hypertrophied mammary gland. At the second, a large tumour was removed from the opposite breast. At the third, a large tumour removed from the seat of one of the former operations appeared to be partly fibrous and partly medullary. At the fourth, the tumour above described was removed from the front of the sternum between the cicatrices of the other operations. The effusion of blood into the lower part of this tumour was the consequence of its being punctured. Profuse hemorrhage occurred at the same time, and a large portion of the tumour, as the preparation shows, protruded through the wound.
29. Sections of a Tumour, with the surrounding skin, removed from the same patient as the tumour last described, and from the situation of the cicatrices of the previous operation. The sections display the same medullary character as the preceding tumour presents, but the morbid substance is softer and more uniformly coloured with effused blood.

During her recovery from this, the fifth, operation, the patient died suddenly. A mass of fibrine mixed with cancerous matter was found in the pulmonary artery, in Series XIII. No. 100.

30. Portion of a Diaphragm, in the substance of which, between its pleural and peritoneal coverings, there is a cyst of lobulated form, containing a serous fluid.

31. A Tumour, with a portion of the muscles of the thigh in which it is imbedded. An elliptical piece of skin is connected with the tumour, in which there is a cicatrix, the result of a former operation for the removal of a morbid growth occupying the same situation. The tumour is of a firm homogeneous texture. In a cavity surrounded by condensed cellular tissue are two ligatures with which arteries had been tied at the first operation.

From a middle-aged man. The second operation was performed about two years after the first. The tumour had grown rapidly, and presented so malignant an appearance that little hope was entertained of the patient's recovery; but he lived several years without any return of the disease.

32. A Fatty Tumour, of elongated oval form, which was removed from the posterior part of the trunk of a boy ten years old.

It was situated beneath the part of the integuments upon which the spring of a truss had pressed.

33. A Tumour removed from the front of the thigh. It was very loosely imbedded in the tissue between the vastus internus muscle and the femur. A complete membranous sac invests it. Before its immersion in spirit, it had a yellow colour. It consists throughout of a firm yellowish substance, closely intersected by tough white bands. Its chemical composition was chiefly albumen, with a very small proportion of oily matter.

The patient was a man fifty-nine years old. The tumour had grown slowly. He died shortly after the operation, and no similar disease was found in any other part of his body.

34. A Cyst removed from the palm of a hand. It contained a serous fluid, and extended over the whole length of the metacarpal bone of the little finger, to the periosteum of which it was at one part closely adherent. Its walls are composed of a tough fibrous tissue; its exterior is smooth; its interior has a slightly polished surface, rendered irregular by prominent intersecting fibrous bands.

35. Part of a thin-walled Cyst, removed from behind the sternomastoid muscle. It contained the acephalocyst hydatid which lies below it.

The patient was a gentleman thirty years old. The swelling caused by the cyst had existed a year, and projected between the sternal and clavicular portions of the muscle.

36. A Tumour removed from the neck just below the ramus of the jaw of a young woman. It is oval, nodulated, compact, and heavy; its section exhibits a glistening white tissue, divided by a few fine fibrous bands into lobular masses of various sizes.

37. A disk-shaped mass of cartilaginous substance, with a nodulated border, which was removed from the interior of the knee-joint of a young man. It is suspended by a portion of cellular tissue, by which it is probable that it had been at one time attached to the synovial membrane.

38. A Cyst removed from beneath the skin covering the lower part of the scapula. It was filled with a fluid resembling venous blood. Its walls are soft, and its interior is polished, but rendered irregular by numerous decussating prominent ridges, which give it a striking resemblance to the interior of an auricle. Its walls are from half a line to two lines in thickness: at the parts where they are thickest, they contain numerous small cells filled with a dark coloured fluid.

The patient was a lad fifteen years old. The tumour had existed eight years; it had grown rapidly for a year, and had given pain for three months previous to its removal. Case-Book, p. 150, No. 173.

Presented by George Macilwain, Esq.

39. A Tumour of the kind named Epulis, removed from the lower jaw of a girl. It is of an irregularly oval form, and composed of a firm, white, obscurely fibrous substance, like the tissue of healthy gum. The narrow base by which it was adherent to the jaw contains numerous osseous spicula. Its free surface is covered by healthy mucous membrane.

40. Sections of a Tibia and of the muscles and integuments covering its anterior part. The lower portion exhibits part of a

firm cancerous ulcer, with exuberant granulations and a somewhat elevated, sinuous border, which is situated directly over an united fracture of the tibia. The upper portion, which is a transverse section of the front of the leg, shows that the cancerous disease extends from the skin through the muscles and other deeper tissues to the surface of the bone ; all these parts being converted into a dense, semi-transparent substance, with obscure traces of fibres radiating towards the surface.

The patient was a man fifty years old. When four years old, he broke his leg, and a portion of bone separated before the fracture united. The integuments over the fracture remained hard and occasionally painful till five years and a half before the amputation of the limb, when he had a blow on the diseased spot, which was followed by ulceration, and the growth of the morbid structure shown in the preparation. The case is published by Mr. Ormerod, in his "Clinical Collections," p. 55, London, 1846.

41. A portion of a large mass of Gelatiniform Cancer, which was formed within the abdomen, apparently in connexion with the omentum. The section displays the whole of the morbid substance partitioned into cells of various sizes, which are bounded and intersected by thin layers of fibrous tissue, and are filled with a transparent, pale yellowish, semi-fluid, jelly-like substance. The external surface of the morbid mass is nodulated and invested by a tough thick membrane.

42. Another mass of Gelatiniform Cancer from the same patient. It appears to have been produced in the abdominal walls and in the substance of a thick and long cord-like adhesion between them and the omentum. It presents the same structure as the preceding. A portion of the transversalis abdominis muscle is attached to its outer surface.

From a woman between forty and fifty years old, in whom the disease had been long in progress. The abdominal cavity was filled by three or four gallons of the gelatiniform substance which had escaped from its cells ; and all the abdominal walls, the mesentery, and omentum, seemed to be involved in the disease.

43. A round, pendulous Fatty Tumour, covered in great part by healthy skin, which was removed from below the buttock of a healthy middle-aged man. Its tissue is variously lobulated ; the cellular partitions of its lobes are tougher than is usual ; its

base extended deeply and widely in the subcutaneous adipose tissue.

44. Sections of a Tumour removed from the front of a man's abdomen. It was covered by thin vascular skin, and was nearly pendulous. It has a somewhat oval form, and measures from an inch and a half to two inches in its several diameters: its surface is slightly knobbed. Its texture is uniformly firm, compact, pale, with an obscurely fibrous appearance, and with many minute cells imbedded in it, which contained a yellow fluid: it is invested by a thin fibro-cellular capsule. With the microscope it appeared to be composed of fine fibro-cellular tissue, interwoven among minute, pale corpuscles, and containing no fat.

The patient was twenty-eight years old. He had no return of the disease.

45. Section of a Tumour removed from over the parotid gland of an apparently healthy woman about thirty years old. It is nearly pyriform, measuring about three inches and a half in length and three inches in its greatest breadth. Its upper half is composed of white, semi-transparent, and compact cartilage; its lower half of a pale, obscurely fibrous, soft, and apparently medullary substance. The boundary between the two substances is clear, though in no regular line; for a few small portions of cartilage are seen imbedded in the medullary substance.

The tumour had grown very slowly and without pain. It was loosely connected with the surrounding parts.

46. Sections of a Cyst removed from beneath the skin of an elderly woman's scalp. Its walls are tough and hard, from half a line to nearly two lines in thickness, and it is filled with irregular plates and grumous masses of a soft, cheesy, sebaceous substance.
47. Section of a large Tumour, formed in the face of a lad sixteen years old. The greater part of it occupies the situation of the superior maxillary bones, which are completely absorbed. Above, the tumour has extended through the left side of the base of the skull into its cavity, where it forms a large projection in the situation of the anterior lobes of the cerebrum;

below, it is united to the soft palate ; in front, it protrudes, and distends the left nostril, and has caused the ulceration of a part of the integuments of the face. The outer surface of the tumour is nodulated ; its interior, shown by the section, is formed of close-set nodules and masses of cartilage, partially and irregularly ossified, and in some parts intersected by layers of a softer, probably fibrous, tissue. A portion of its external surface, projecting below the left nostril, has sloughed.

48. The other half of the Tumour last described. This portion extends into the cavity of the left orbit, and has elongated and compressed the left optic nerve, pushing it to the outer wall of the orbit. The tumour presents the same partially ossified cartilaginous structure as the preceding.
49. Section of a Tumour, thirteen pounds in weight, which grew in front of the lumbar vertebræ of a soldier thirty-seven years old. It was loosely connected with the vertebræ by its investing fibro-cellular tissue. It surrounded the aorta, and the inferior cava and iliac veins ; the veins were compressed and filled by coagula. It was of an oval form, lobulated, sixteen inches long, and about six inches wide. Half the tumour was composed of a soft, pulpy, and flocculent medullary substance of a brownish colour. A small portion of this is preserved, and hangs in shreds ; the other half of the tumour, including the greater part of that which is preserved, consisted of nodules of cartilage of various forms—rounded, oval, elongated, or quite irregular—and from one-fourth to three-fourths of an inch in diameter. These are invested and held together by layers of fibro-cellular tissue. They have both the obvious and the microscopic characters of foetal cartilage. In the centres of some of the nodules of cartilage there are small portions of cancellous bone, like the points of ossification of the foetal skeleton ; the centres of others are rather softened. The limit between the cartilaginous and the medullary part of the tumour is well marked ; and although they are in close contact, there is no appearance of any conditions intermediate between them, as if the one had degenerated into the other.

In a portion of the tumour, not shown in this specimen, the softening process

had reduced many of the nodules of the cartilage into a yellow viscid fluid, which was retained, as in thick-walled cysts, in the fibro-cellular investments of the softened nodules, and was in some instances mixed with blood.

Presented by James Johnson, Esq.

50. Portions of a Tumour removed from the inferior border of the scapula. The greater part of the tumour, including all that by which it was attached to the scapula, consists of hard cancellous bone, the cells of which, formed like those of the natural bones of the skeleton, are filled with healthy-looking marrow. The outer portion of the tumour consists of a layer of greyish-white transparent cartilage, like that of the foetal skeleton, investing the osseous part, and itself invested by a layer of fibro-cellular tissue. The general form of the tumour is an irregular oval, and its surface is deeply nodulated.

It was removed from a man between twenty and thirty years old. He recovered from the operation.

51. The Base and a portion of the Spine of a left Scapula, removed with a large tumour attached to both its surfaces. A section of the tumour has been made, that portion of it being removed which lay nearest to the vertebral column: the whole length of the base of the scapula is deeply imbedded in the portion which is preserved. The tumour is of nearly oval form, between six and seven inches in length: its surface is nearly smooth; and is connected with the adjacent tissues by a thin fibro-cellular investment. On its cut surface, it presents a pale, yellowish-white basis, which is intersected by a few thin partitions of fibro-cellular tissue, and is besides variously traversed by opaque white fibres. It is throughout firm, compact, elastic, and heavy; and bears a close resemblance to the fibrous tumours of the uterus, which it further resembled in yielding a large quantity of gelatine, and in its microscopic texture.

About a year before the removal of this specimen, the patient, a middle-aged man, had a large firm tumour removed from beneath the base of the scapula. The wound healed; but shortly afterwards this tumour appeared and grew rapidly. After the second operation another similar tumour soon grew: and the man died with tumours attached to the internal surface of the ribs, beneath the seat of the former operations.

Presented by F. C. Skey, Esq.

52. Section of a flattened oval fibrous Tumour, removed from

beneath the integuments of a woman's back. Its base was closely connected with the trapezius muscle, a portion of which was removed with it. The tumour is composed of four portions of unequal size, which are loosely connected by fibro-cellular tissue; and on the cut surface of each portion there is an appearance of lobular arrangement. In texture, the whole of the tumour resembles the preceding specimen, and, more nearly, the fibrous tumours of the uterus. In the portion of integument lying over the tumour is a large cicatrix, the result of an operation by which a tumour had been previously removed from the same part.

The patient was an apparently healthy woman, between fifty and sixty years old. Nine months before the removal of this tumour, one, which had been growing for about sixteen months, was removed from the same part. This was growing rapidly, and with much pain; the skin over it was very red, and the adjacent veins were large. There was profuse hemorrhage at the time of the operation; but the patient recovered from it, and seemed restored to health. Examined with the microscope, the tumour appeared to consist of well formed fibrous tissue, and it yielded a large quantity of gelatine when boiled in water. The other half is in the Museum of the Royal College of Surgeons of England.

53. Sections of an elongated oval fibrous Tumour, very like the last two specimens. The resemblance extended to the microscopic and chemical characters.

The tumour was removed from a lady twenty years old. It was situated beneath the trapezius muscle, and was closely attached to the spine of the scapula. It had been growing two years. The patient recovered from the operation.

54. Section of a Great Toe, and of a Tumour closely surrounding, but apparently not springing from, the last phalanx. The tumour forms a large, irregularly oval mass, of which the greater part of the surface, exposed by ulceration of the integuments, is covered by coarse wart-like granulations, and a thin layer of either greyish lymph or slough. Except at its surface, which is rather softer, the whole tumour consists of a firm, tough, elastic substance of uniform close texture, pink and white, vascular. Most parts of the tumour, also, have an obscurely fibrous appearance, as if fibres radiated from its base towards its surface. The margins of the portion of the tumour which is exposed and ulcerated are sinuous, and overhang the skin through which it protrudes; while the skin itself is

thickened, everted, and closely adapted to the margins of the protrusion.

The patient was a man forty-three years old. The disease commenced four years before the removal of the foot, when the toe-nail spontaneously fell off. Successive desquamations of cuticle from the bed of the nail, with ichorous discharge, occurred for a year and a half, when ulceration commenced, and the growth of the tumour soon followed. In the later periods of disease profuse hemorrhages repeatedly took place from the tumour. After amputation of the foot the patient recovered. Case-Book, Vol. i. p. 200, No. 219. The other half of the tumour is in the Museum of the Royal College of Surgeons of England.

Presented by Robert Ceely, Esq.

55. Two portions of Cartilage removed from the knee-joints of a lad eighteen years old. They are almost exactly alike in form and size; each resembling such a piece of cartilage as might be obtained by removing that which covers the posterior surface of one of the condyles of a femur; and each, as such a piece would be, is smooth and polished on its convex, and rough on its concave, surface.

There was an interval of about a year between the operations by which these bodies were removed from the joints. The patient recovered from both the operations without an untoward symptom.

Presented by Luther Holden, Esq.

56. A quantity of long pale hair, with portions of fatty matter, from a cyst. The fatty matter is in little globules arranged like beads upon the hairs.

The cyst was removed from beneath the skin of the chest of a middle-aged man. The rest of its contents consisted of a pale creamy fluid.

57. A large Growth removed from the scalp of an old woman. It forms an irregularly oval mass, about five inches in its chief diameter, knobbed on its external surface, and consisting of a compact, but soft and friable, substance, imperfectly lobed, and presenting no appearance of definite texture. Its surface is rough, as if the mass were superficially ulcerated: its border overhangs to a considerable distance the integuments through which it has protruded. By its side is a cyst half an inch in diameter filled with soft, grumous, yellowish substance, like the ordinary contents of cutaneous cysts in the scalp.

The patient was eighty years old. Both she and three of her children had numerous cysts, like wens, in the scalp. Two years and a half before her death one

of these cysts, which had not previously appeared different from the rest, inflamed. It was opened, and sebaceous matter was discharged from it. The opening made into it did not heal, but ulcerated, and a small hard lump remained under the ulcer for a year, when, after erysipelas of the head, it began to grow and rather quickly increased to that shown in the preparation. Portions of its surface frequently sloughed, and occasionally it bled largely.

Presented by James Reid, Esq.

58. Section of a part of the integuments and muscles of an upper Arm. The subcutaneous tissue, and the cellular tissue connected with it and extending between the muscles down to the bone, are indurated, opaque white, and fibrous like the tissue of a cicatrix. Small portions only of the subcutaneous fat remain. Imbedded in this indurated substance, and in a few instances in the adjacent muscles also, are numerous small, nodulated, soft tumours. They now present a pinkish colour; but, in the recent state, they were greyish, glistening, nearly transparent, and jelly-like. Many of the tumours are closely grouped; and the skin over some of them is raised in a coarsely tuberculated form, and is excoriated or covered by a thin cuticle.

59. A Section of the integuments which covered the elbow of the same arm, exhibiting a large oval mass, apparently composed of the same substance as the tumours just described, but firmer and more uniform. Its exposed surface is formed of healthy-looking granulations. Its base rests on the aponeurosis of the triceps humeri muscle.

The patient was a woman thirty-two years old. The disease had existed eight years. It commenced with a deep seated induration in the arm, whence it extended by the formation of fresh tumours both upwards and downwards, till the surface of nearly the whole upper arm was tuberculated. The patient recovered after amputation at the shoulder-joint.

60. A large brain-like Medullary Tumour spotted with blood.

The patient was a woman forty years old. The tumour, which was situated in the middle of the back, had been four months in progress. The integuments sloughed over it, and as she was endeavouring to raise herself in bed, the whole mass fell out through the slough. It was followed by profuse hemorrhage, and she shortly after died.

61. A Cyst of irregularly lobed form, the walls of which are almost entirely composed of a substance like bone.

It was taken from a liver in which were many others of the same kind.

Presented by Thomas Ilott, Esq.

SERIES XXXVI.

URINARY AND PROSTATIC CALCULI*.

CALCULI of uniform composition.

- Composed principally of uric or lithic acid, 1, 2, 3, 5, 6, 6, 9, 11, 12, 17, 123, 132, 133, 138, 140, 141, 147, 153, 157, 158, 159, 164, 165, 167, 168, 169, 170.
- „ „ of urate or lithate of ammonia, 30, 35, 39, 46, 57, 104, 108, 119, 122, 127, 152, 139.
- „ „ of oxalate of lime, 21, 23, 28, 31, 33, 34, 36, 131, 137, 148, 160, 162, 180, 188.
- „ „ of phosphate of lime, 49, 92, 112, 113, 156, 185.
- „ „ of phosphate of ammonia and magnesia, 95.
- „ „ of phosphate of lime, with phosphate of ammonia and magnesia (Fusible Calculi), 13, 15, 42, 43, 45, 47, 50, 83, 91, 93, 94, 120, 126, 143, 154, 161, 174, 187.
- „ „ of cystic oxyde, 114, 118.
- Containing carbonate of lime, 51, 112, 149, 154, 156, 184,

CALCULI of various composition, in two layers.

- With a nucleus of uric acid, 4, 14, 16, 37, 55, 65, 75, 77, 78, 100, 121, 125, 136, 150, 176, 178.
- „ „ urate of ammonia, 19, 20, 22, 26, 40, 41, 56, 63, 67, 71, 76, 81, 88, 98, 102, 105, 106, 107, 110, 117, 122, 155, 177, 179, 181.
- „ „ oxalate of lime, 27, 29, 44, 53, 59, 60, 62, 64, 68, 69, 74, 79, 82, 86, 87, 115, 116, 130, 151, 166.

CALCULI of various composition, in three layers.

- With a nucleus of uric acid, 70, 84, 99, 103, 124, 163, 175.
- „ „ urate of ammonia, 7, 24, 25, 48, 52, 58, 61, 66, 73, 80, 89, 90, 97, 101, 111, 128, 135, 149.
- „ „ oxalate of lime, 38, 85.

* The Museum is indebted to Thomas Taylor, Esq., the analyst of the Concretions in the Museum of the Royal College of Surgeons of England, for the construction of the following table of reference, as well as for all the analyses of the calculi for which no authority is specially mentioned.

CALCULI consisting of more than three various layers, 10, 18, 32, 51, 54, 72, 96, 109.

Renal calculi, 92, 93, 94, 112, 113, 145, 168, 182; and in Series XXVI.

Prostatic calculi, 49; and in Series XXIX.

Calculi spontaneously broken, 132, 136, 138.

Calculi from animals, 184 to 189.

For the effects produced by urinary and prostatic calculi, in the several organs in which they occur, see Series XXVI., XXVII., XXIX., and XXX.

1. Section of a Calculus. Uric Acid, nearly pure.

From the bladder of a man aged thirty-nine. Lithotomy by Mr. Earle.

2. Three smooth and flattened Calculi. Uric Acid, nearly pure; Nucleus crystalline.

From the bladder of a man sixty-four years old. Lithotomy by Mr. Earle. Nine calculi were extracted at the operation, and thirty small ones from the kidney after death.

3. Section of a Calculus. Uric Acid, nearly pure.

From the bladder of a boy twelve years old. Lithotomy by Mr. Earle.

4. Sections of a Calculus. Nucleus, Uric Acid: the remainder, Urate of Ammonia with a small quantity of the Phosphates, and Oxalate of Lime.

From the bladder of a boy four years and a half old. Lithotomy by Mr. Vincent.

5. Sections of a Calculus. Uric Acid, nearly pure.

From the bladder of a boy twelve years old. Lithotomy by Mr. Vincent.

6. Sections of a Calculus. Uric Acid, with some Urate of Ammonia.

From the bladder. Lithotomy by Mr. Lawrence.

7. Section of a Calculus. Nucleus, Urate of Ammonia; surrounding portion, Oxalate of Lime, nearly pure; remainder, Uric Acid with a little Oxalate of Lime.

Extracted by Mr. Stanley from a cyst communicating with the urethra near the bladder of a boy six years old.

8. Sections of a Calculus. Compact Uric Acid. Analysis by Dr. Hue.

From the bladder of a man sixty-five years old. Lithotomy by Mr. Stanley. The bladder and prostate gland are preserved in Series XXIX. No. 9.

9. Section of a Calculus. Uric Acid, nearly pure.
From the urothra. Presented by A. S. Abbott, Esq.
10. Sections of a Calculus. Nucleus, Uric Acid, surrounded by a thin layer of Oxalate of Lime; around this, Uric Acid nearly pure; the remainder, Uric Acid and Oxalate of Lime in alternate layers.
11. Section of a Calculus. Uric Acid. Analysis by Dr. Hue.
12. Section of a Calculus. Uric Acid, nearly pure.
13. Section of a Calculus. The white portion, Fusible Calculus. The grey layers, Urate of Ammonia and animal matter.
14. Section of a Calculus. Nucleus, Uric Acid; coated by a thin layer of Urate of Ammonia, containing Phosphate and Oxalate of Lime.
15. Sections of a Calculus. Mixed Phosphates with Uric Acid, Urate of Ammonia and animal matter.
16. Section of a Calculus. Nucleus, Uric Acid; with a coating of the Phosphates.
17. Fifty-three Calculi, with flattened, mutually adapted, and smooth surfaces. Uric Acid, nearly pure.
Taken from the bladder of a man after death.
18. Sections of a Large Calculus. Central portion, Oxalate of Lime: white layer surrounding it, Oxalate of Lime, Urate of Ammonia and Phosphates; remainder, Uric Acid, nearly pure: a thin layer of Urate of Ammonia, containing a little Oxalate and Phosphate of Lime, surrounds the whole.
From the bladder of a man. Lithotomy by Mr. Lawrence.
19. Calculus. Alternate layers of Urate of Ammonia containing Oxalate of Lime, and of pure Oxalate of Lime.
From the bladder of a child two years and a half old. Lithotomy by Mr. Earle.

20. Sections of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime, surrounded by Oxalate of Lime.

From the bladder of a young woman. Lithotomy by Mr. Earle.

21. Calculus of well marked mulberry-like form. Oxalate of Lime.

Presented by H. Earle, Esq.

22. Sections of a Calculus. Nucleus, Urate of Ammonia with a little earthy matter; surrounded by pure and very compact Uric Acid.

From the bladder of a boy seven years old. Lithotomy by Mr. Earle.

23. Mulberry Calculus. Oxalate of Lime.

From the bladder of a boy ten years old. Lithotomy by Mr. Vincent.

24. Sections of a Calculus. Greater portion, Oxalate of Lime, coated by the mixed Phosphates: central portion, Urate of Ammonia.

From the bladder of a boy twelve years old. Lithotomy by Mr. Vincent.

25. Sections of a Calculus. Nucleus, Urate of Ammonia with a small quantity of Oxalate of Lime; the next layer, Oxalate of Lime; coated by the mixed Phosphates.

From the bladder. Lithotomy by Mr. Lawrence.

26. Two Small Calculi. Nucleus, Urate of Ammonia with a little Oxalate of Lime, surrounded by a thin layer of pure Oxalate of Lime.

From the bladder of a boy. Lithotomy by Mr. Lawrence.

27. Sections of a Calculus. Nucleus, Oxalate of Lime; surrounded by the Phosphates.

From the bladder of a boy seven years old. Lithotomy by Mr. Stanley.

28. Calculus. Oxalate of Lime, with a little Uric Acid.

Extracted by Mr. Abbott from the urethra.

29. Calculus. Nucleus, Oxalate of Lime; coated by crystals of Phosphate of Ammonia and Magnesia.

From the bladder of a lad eighteen years old. Lithotomy by Mr. Abbott.

30. Sections of a Small Calculus. Urate of Ammonia.

From the urethra of a boy.

31. Calculus. Oxalate of Lime. Analysis by Dr. Hue.

From the urethra of a boy eight years old.

32. Sections of a Calculus. Nucleus, Urate of Ammonia with some Lime; next, Oxalate of Lime; then, Uric Acid with a small quantity of the Phosphates; and lastly, a thin layer of Urate of Ammonia containing Oxalate and Phosphate of Lime, and coloured by Purpurate of Ammonia.

33. Portion of a Calculus. Oxalate of Lime. Analysis by Dr. Hue.

Extracted from the urethra of a boy by Mr. Vincent. A model of the entire calculus is placed beneath the portion of it.

34. Section of a Calculus. Oxalate of Lime. Analysis by Dr. Hue.

35. Calculus. Urate of Ammonia, with a little Phosphate and Oxalate of Lime.

From the urethra of a female.

36. Sections of a Calculus. Oxalate of Lime. Some portions of the Calculus are of a peculiar golden hue; they contain Urate of Ammonia.

37. Sections of a Calculus of the kind commonly called the Hemp-Seed Calculus. Nucleus, Uric Acid, covered by a thin smooth layer of Oxalate of Lime.

38. Sections of a Calculus. Nucleus, Oxalate of Lime; surrounded by Uric Acid, with veins of Oxalate of Lime; outer coat, pure Oxalate of Lime.

39. Sections of a Calculus. Urate of Ammonia with some Phosphate and Oxalate of Lime. The external portion contains more earthy matter than the internal.

From the bladder of a boy five years old. Lithotomy by Mr. Earle.

40. Section of a Calculus. Nucleus, Urate of Ammonia with a little earthy matter ; surrounded by the mixed Phosphates.

From the bladder of a boy eight years old. Lithotomy by Mr. Earle.

41. Section of a Calculus. Nucleus, Urate of Ammonia ; the rest, Urate of Ammonia alternating with the mixed Phosphates.

From the bladder of a boy four years old. Lithotomy by Mr. Earle.

42. Sections of a Calculus. Mixed Phosphates ; the dark veins in it probably Urate of Ammonia. The form of the calculus and the arrangement of its veins appear to indicate that it is composed of two calculi united at their borders.

From the bladder of a man fifty-four years old. Lithotomy by Mr. Vincent.

43. Fragments of a Calculus. Phosphate of Lime, with a small portion of Phosphate of Magnesia and Ammonia, slightly fusible. Analysis by Dr. Hue.

From the bladder of a man thirty-seven years old. Lithotomy by Mr. Vincent.

44. Fragments of a Calculus. Nucleus, Oxalate of Lime (apparently) surrounded by the mixed Phosphates.

From the bladder of a man forty years old. Lithotomy by Mr. Vincent.

45. Sections of a Calculus. Triple Phosphate, with Phosphate of Lime, deposited around a piece of the stilet of a catheter which is bent into the form of a hook.

From the bladder of a man. Lithotomy by Mr. Lawrence.

46. Fragments of a Calculus. Urate of Ammonia mixed with Phosphate of Ammonia and Magnesia and Phosphate of Lime. Fifteen grains yielded on analysis,

Uric Acid	9 grains
Phosphate of Lime	1.5
Phosphate of Ammonia and Magnesia	3.1
Ammonia and animal matter	1.4
	<hr/>
	15.

From the bladder. Lithotomy by Mr. Lawrence.

47. A large Oval Calculus. Phosphate of Lime with Phosphate of Ammonia and Magnesia.

Extracted by Mr. Stanley from a cyst which communicated with a fistulous passage leading from the bladder to the perineum.

48. Sections of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime; surrounded by a mixture of Urate of Ammonia, Oxalate of Lime, and a small quantity of the Phosphates; and, lastly, a layer of the fusible calculus.

From the bladder of a boy ten years old. Lithotomy by Mr. Abbott.

49. Numerous small round Calculi from the prostate gland. Phosphate of Lime. Analysis by Dr. Hue.

50. Numerous Calculi with flattened surfaces. Phosphate of Ammonia and Magnesia, a little Phosphate of Lime, and some Urate of Ammonia.

Taken, after death, from the bladder of a middle-aged man.

Presented by T. Smith, Esq.

51. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime, surrounded by Oxalate of Lime; the remainder may be divided into three portions—the inner one consisting of Phosphate of Lime with Phosphate of Ammonia and Magnesia, and a little Carbonate of Lime; the middle, which is much harder in texture and more compact, of Phosphate of Lime and Carbonate of Lime; and the outer, of Phosphate of Ammonia and Magnesia and Phosphate of Lime.

From the bladder of a lad aged seventeen. Lithotomy by Mr. Earle.

52. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime; surrounded by impure Uric Acid containing some layers of Oxalate of Lime; coated by the fusible calculus.

From the bladder of a man twenty-seven years old. Lithotomy by Mr. Earle.

53. Section of a Calculus. Uric Acid upon a Nucleus of Oxalate of Lime. Analysis by Dr. Hue.

From the bladder of a boy nine years old. Presented by H. Earle, Esq.

54. Section of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime; around this, a ring of pure Oxalate of Lime; the remainder, Uric Acid with thin layers of Oxalate of Lime, coated by Urate of Ammonia and Oxalate of Lime.

From the bladder of a boy nine years old. Lithotomy by Mr. Earle.

55. Section of a Calculus. External layer, Phosphates, slightly fusible ; Nucleus, Uric Acid, containing, apparently, some veins of Urate of Ammonia.

Presented by H. Earle, Esq.

56. Section of a Calculus. Nucleus, Urate of Ammonia ; surrounded by the mixed Phosphates, in which are layers of the same kind as the nucleus.

From the bladder of a child. Lithotomy by Mr. Earle.

57. Portion of a Calculus. Urate of Ammonia with a comparatively large quantity of Phosphate and Oxalate of Lime, and a little Uric Acid. Crystals of Phosphate of Ammonia and Magnesia between the layers.

From the bladder of a boy seven years old. Lithotomy by Mr. Earle.

58. Sections of a large Calculus. Oxalate of Lime, coated by the mixed Phosphates. Nucleus, Urate of Ammonia containing Oxalate of Lime.

From the bladder of a lad seventeen years old. Lithotomy by Mr. Vincent. The bladder and kidneys of the patient from whom this calculus was removed are preserved in Series XXVII. No. 23.

59. Section of a Calculus. Nucleus, Oxalate of Lime ; with a crust of the fusible calculus. Analysis by Dr. Hue.

From the bladder of a boy ten years old. Lithotomy by Mr. Vincent.

60. Sections of a Calculus. Nucleus, Oxalate of Lime ; with a crust of the fusible calculus. Analysis by Dr. Hue.

From the bladder of a boy six years old. Lithotomy by Mr. Vincent.

61. Section of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime ; surrounded by Oxalate of Lime, and coated by the Phosphates.

From the bladder of a boy ten years old. Lithotomy by Mr. Vincent.

62. Section of a Calculus. Nucleus, Oxalate of Lime, with a deposition of the fusible calculus. Analysis by Dr. Hue.

From the bladder of a boy ten years old. Lithotomy by Mr. Vincent.

63. Sections of a Calculus. Nucleus, Urate of Ammonia with some

Phosphate and Oxalate of Lime; coated by the fusible calculus.

From the bladder of a boy eight years old. Lithotomy by Mr. Vincent.

64. Calculus. Nucleus, Oxalate of Lime; with a crust of the fusible calculus. Analysis by Dr. Hue.

From the bladder of a lad sixteen years and a half old. Lithotomy by Mr. Vincent.

65. Sections of a very large Calculus. Uric Acid coated by the Phosphates. Oxalate of Lime is diffused through some parts of the latter.

From the bladder of a man sixty years old. Lithotomy by Mr. Lawrence.

66. Sections of a Calculus. Nucleus, Urate of Ammonia; next, Oxalate of Lime and Phosphates; lastly, pure Phosphates.

From the bladder of a boy. Lithotomy by Mr. Lawrence.

67. Sections of three Calculi. Central portion, Urate of Ammonia, Oxalate of Lime and Phosphates; external part, Oxalate of Lime. Analysis by Dr. Hue.

From the bladder. Lithotomy by Mr. Lawrence.

68. Calculus. Nucleus, Oxalate of Lime; surrounded by the fusible calculus. Analysis by Dr. Hue.

From the bladder. Lithotomy by Mr. Lawrence.

69. Section of a Calculus. Nucleus, Oxalate of Lime; surrounded by the fusible calculus. Analysis by Dr. Hue.

From the bladder of a female. Lithotomy by Mr. Stanley.

70. Two Calculi. The larger, Phosphate of Ammonia and Magnesia, with Phosphate of Lime and a considerable quantity of Urate of Ammonia. Uric Acid and Animal Matter, probably investing a nucleus similar to the smaller divided calculus, which consists at its centre of Uric Acid nearly pure, surrounded by Urate of Ammonia, with Phosphate and Oxalate of Lime, and coated by the same mixture as the larger.

From the bladder of a boy eight years old. Lithotomy by Mr. Abbott. The small stone was first removed; and the large one two years afterwards.

71. Calculus. Nucleus, Urate of Ammonia: exterior, fusible, with a large portion of animal matter.

From the bladder of a boy aged twelve. Lithotomy by Mr. Abbott.

72. Sections of a large Calculus. Central portion, Urate of Ammonia. Next layer, Oxalate of Lime. Third layer, looser in texture, fusible. Fourth or outermost layer, Urate of Ammonia, with, possibly, a very small portion of Oxalate of Lime. Analysis by Dr. Hue.

From the bladder of a man thirty-six years old. Lithotomy by Mr. Abbott.

73. Section of a large Calculus. Oxalate of Lime, surrounded by the mixed Phosphates, containing much animal matter and some Uric Acid. Nucleus, Urate of Ammonia with Oxalate of Lime.

From the bladder of a man twenty-six years old. Lithotomy by Mr. Earle.

74. Section of a Calculus. Nucleus, Oxalate of Lime; the external strata Urate of Ammonia with a little Phosphate and Oxalate of Lime.

75. Six rough granulated Calculi. Nucleus, Uric Acid; externally, fusible. Analysis by Dr. Hue.

From the bladder of a man.

76. Section of a large Calculus. Nucleus, Urate of Ammonia, surrounded by Phosphate of Lime, and Phosphate of Magnesia and Ammonia.

77. Sections of a Calculus. Uric Acid, surrounded by a thin coating of Urate of Ammonia.

78. Calculus. Uric Acid, surrounded by the mixed Phosphates. A large portion of the exterior has been removed.

79. Section of a Calculus. Nucleus, Oxalate of Lime; with a crust of the Fusible Calculus. Analysis by Dr. Hue.

80. Section of a Calculus. Nucleus, Urate of Ammonia with

Oxalate of Lime; next layer, Oxalate of Lime; externally, principally the Fusible Calculus.

81. Section of a Calculus. Nucleus, Urate of Ammonia with earthy matter; external part, principally the Phosphates.

82. Portions of a Calculus. Oxalate of Lime surrounded by the mixed Phosphates.

From the bladder of a boy nine years old. Lithotomy by Mr. Skey.

83. Twelve polyhedral Calculi. Fusible, with a comparatively large proportion of Phosphate of Lime, and a small portion of Uric Acid. Analysis by Dr. Hue.

84. Section of a large Calculus. Nucleus, Uric Acid; around it, a thin layer of Oxalate of Lime; the outer white layer, fusible. Analysis by Dr. Hue.

From the bladder of a man forty-two years old. Lithotomy by Mr. Lawrence.

85. Section of a Calculus. Oxalate of Lime internally, with an external stratum of impure Uric Acid; a thin layer of Urate of Ammonia with Oxalate of Lime coating the whole.

Extracted by Mr. Earle from the bladder of a female by dilatation of the urethra.

86. Section of a Calculus. Uric Acid upon a nucleus of Oxalate of Lime. Analysis by Dr. Hue.

From the bladder of a boy aged seven. Lithotomy by Mr. Earle.

87. Calculus. Nucleus, Oxalate of Lime; the Phosphates forming the external layer. Analysis by Dr. Hue.

From the bladder of a child seven years and a half old. Lithotomy by Mr. Earle.

88. Section of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime; externally, the Phosphates.

From the bladder of a child four years old. Lithotomy by Mr. Earle.

89. Sections of a Calculus. Nucleus, chiefly Urate of Ammonia,

with a little Oxalate of Lime ; coated by Oxalate of Lime ; and externally by the Phosphates.

From the bladder. Lithotomy by Mr. Lawrence.

90. Sections of a Calculus. Nucleus and central portion, Oxalate of Lime and Urate of Ammonia, with a little of the Phosphates ; then follows, chiefly, Oxalate of Lime ; externally is a mixture of the Oxalate of Lime and Urate of Ammonia, with some Phosphates. Analysis by Dr. Hue.

From the bladder. Lithotomy by Mr. Lawrence.

91. Fusible Calculous Matter deposited around a piece of paper which had been passed into the urethra of a female.
92. Two lobed Calculi from a Kidney. Phosphate of Lime, with a large proportion of animal matter. Analysis by Dr. Hue.
93. Three similar Calculi from a Kidney. Phosphate of Lime, and a small portion of the Fusible Calculus. Analysis by Dr. Hue.
94. A large lobed and branched Calculus from a Kidney. Fusible Calculus coated by crystals of the Triple Phosphate.
95. Calculus. Regularly crystallized Triple Phosphate, upon, probably, a nucleus of Uric Acid. Analysis by Dr. Hue.
96. Sections of a large Calculus. Central portion, Urate of Ammonia with Oxalate of Lime, surrounded by Oxalate of Lime ; next, Uric Acid nearly pure ; a thin layer of the Fusible Calculus coats the whole.

From the bladder after death. Weight, $\frac{3}{4}$ v. 3v. 9j.

97. Sections of a Calculus. Nucleus, Urate of Ammonia with a little Oxalate of Lime, surrounded by pure Oxalate of Lime ; the whole coated by the mixed Phosphates.

From the bladder of a man. Lithotomy by Sir James Earle.

98. Section of a Calculus. Urate of Ammonia with a little Oxalate

of Lime; the remainder, Oxalate of Lime; and the minute yellow dots on the external surface, Uric Acid.

From the bladder of an idiot boy eight and a half years old. Lithotomy by Mr. Earle.

99. Sections of a Calculus. Nucleus and surrounding yellow portion, impure Uric Acid with Oxalate of Lime, apparently in distinct layers; grey layer around these, Urate of Ammonia with a much larger quantity of Oxalate of Lime, uniformly mixed; external layer, Phosphate of Ammonia and Magnesia, with some Phosphate of Lime.

From the bladder of a man fifty-seven years old. Lithotomy by Mr. Earle. After the wound had healed the patient died with diseased bladder and kidneys.

100. Sections of a Calculus. Uric Acid, surrounded by a layer of Urate of Ammonia, containing Phosphate and Oxalate of Lime.

Removed after death from the bladder of a man who was supposed to have been cured by drinking lime-water. Two calculi were in the bladder.

101. Sections of a Calculus. Nucleus, Urate of Ammonia with a trace of earthy matter; surrounding lighter portion, Oxalate of Lime with a little Uric Acid; the rest, Oxalate of Lime with animal matter alone. Mixed Phosphates adhere externally in detached portions.

From the bladder of a man thirty-five years old. Lithotomy by Mr. Earle.

102. Sections of a Calculus. Urate of Ammonia with about one-twentieth of Oxalate of Lime and some Phosphate of Lime; externally, mixed Phosphates with a little Urate of Ammonia.

From the bladder of a boy five and a half years old. Lithotomy by Mr. Earle.

103. Section of a Calculus. Uric Acid, alternating with Urate of Ammonia containing Oxalate of Lime; surrounded by a thick layer of the Phosphates.

From the bladder of a man thirty-six years old. Lithotomy by Mr. Earle.

104. Sections of a Calculus. Urate of Ammonia with Oxalate and Phosphate of Lime.

From the bladder of a child two and a half years old. Lithotomy by Mr. Earle.

105. Sections of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime ; surrounded by Oxalate of Lime and a small quantity of the Phosphates.

From the bladder of a child seven years old, with rickets and diseased bladder. Lithotomy by Mr. Earle.

106. Sections of a Calculus. Nucleus, Urate of Ammonia ; outer portion, nearly pure Uric Acid.

From the bladder of a boy ten years old. Lithotomy by Mr. Vincent.

107. Fragments of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime ; surrounding portion, Oxalate of Lime.

From the bladder of a boy two years and three quarters old. Lithotomy by Mr. Vincent.

108. Sections of a Calculus. Urate of Ammonia with about six per cent. of the Fusible Calculus.

From the bladder of a boy five years old. Lithotomy by Mr. Vincent.

109. Sections of a Calculus. Nucleus and surrounding cellular portion, Oxalate of Lime, containing a little Urate of Ammonia, surrounded by Phosphate of Lime with a little Phosphate of Ammonia and Magnesia ; the darker band within this is pure Phosphate of Lime, and exhibits the radiated structure described by Dr. Wollaston.

From the bladder of a boy eight years old. Lithotomy by Mr. Vincent.

110. Sections of a Calculus. Internal portion, Urate and Purpurate of Ammonia with the mixed Phosphates ; external portion, mixed Phosphates, easily fused.

From the bladder of a boy two and a half years old. Lithotomy by Mr. Vincent.

111. Sections of a Calculus. Nucleus (the long axis of which is perpendicular to the axis of the calculus), Urate of Ammonia with a little Oxalate of Lime ; surrounding portion, Urate of Ammonia with the mixed Phosphates ; the remainder, mixed Phosphates with a little Uric Acid.

From the bladder of a boy one year and ten months old. Lithotomy by Mr. Vincent.

112. Two large branched Calculi from the kidneys. Phosphate of Lime with some Carbonate of Lime and a small quantity of Urate of Ammonia.
113. A similar Calculus, from a kidney.
114. Section of a Cystic Oxyde Calculus, coated, in parts, by the mixed Phosphates. Weight, 155 grains.
115. Calculus. Oxalate of Lime, projecting in nodules and sharp points, and surrounded by the Phosphates.
116. Fragments of a Calculus. Nucleus, Oxalate of Lime; remainder, Uric Acid.
117. Three large Calculi. Nucleus, Urate of Ammonia; remainder, Phosphate of Ammonia and Magnesia, with Phosphate of Lime and some Urate of Ammonia.

Passed from the urethra of a man sixty-three years old.
Presented by — Robinson, Esq.

Removed from the bladder of a man after death.
Presented by J. F. Crookes, Esq.

118. The half of a large Cystic Oxyde Calculus, with a nodulated and apparently crystallized surface. The calculus weighed 740 grains. Its specific gravity is 1.13. It measures 1 inch and $\frac{9}{10}$ through its long axis; and $1\frac{1}{5}$ and $1\frac{1}{10}$ through its respective shorter axes. Ten grains gave on analysis,

Cystic Oxyde	9.1
Phosphate of Lime38
Phosphate of Ammonia and Magnesia1
Animal matter and loss42

10.

The calculus was taken after death from the bladder of a man twenty-one years old. He died with inflammation of the bladder, ureters, and kidneys. Case-Book, Vol. i. No. 221. The other half of the calculus is in the Museum of the Royal College of Surgeons of England, D. 1.

119. Calculus. Urate of Ammonia with Oxalate of Lime.

Removed from the urethra of a boy by Mr. Lawrence.

120. Fragments of a Calculus, composed principally, according to the analysis by Dr. Prout, of the mixed Phosphates.

They were removed from the bladder of a female by Mr. Stanley. There are also in the bottle several hairs, with calculous matter upon them, which were passed with the urine of the same patient.

121. Sections of a Calculus. Central portion, an impure Lithic Acid; the deeper coloured part is of a more pure Lithic Acid, while the external part consists of the Phosphates with some Oxalate and Carbonate of Lime. Analysis by Dr. Prout.

From the bladder of a boy fourteen years old. Lithotomy by Mr. Stanley.

122. Section of a Calculus. Nucleus, Urate of Ammonia, with Oxalate of Lime in alternate layers with the mixed Phosphates.

Passed spontaneously from the bladder of a girl four years old.

123. Sections of a Calculus. Uric Acid, compact and very pure.

From the bladder of a man seventy-three years old. Lithotomy by Mr. Lawrence.

124. Sections of a Calculus. Nucleus, Uric Acid; surrounding grey band, Urate of Ammonia; remainder, mixed Phosphates with crystals of the Phosphate of Ammonia and Magnesia.

From the bladder of a boy ten years old. Lithotomy by Mr. Stanley.

125. Fragments of a Calculus weighing 5j ß. Impure Uric Acid, probably surrounded by Oxalate of Lime and some Phosphate of Lime.

Passed from the bladder of a man after lithotripsy by Mr. Stanley.

126. Sections of a Calculus. Mixed Phosphates, with animal matter and a little Uric Acid; the grey veins in it, Urate of Ammonia.

From the bladder of a man after death. The bladder is preserved in Series XXVII. No. 16.

127. Sections of a Calculus. Urate of Ammonia with a little Oxalate of Lime; a small quantity of the Phosphates forms the exterior.

From the bladder of a boy ten years old. Lithotomy by Mr. Stanley.

128. Sections of a Calculus. Nucleus, Urate of Ammonia, surrounded by Oxalate of Lime and a little Urate of Ammonia; coated by the mixed Phosphates.

From the bladder of a boy. Lithotomy by Mr. Lawrence.

129. Fragments of a Calculus. Uric Acid.

From the bladder of a man twenty-five years old, after lithotripsy by Mr. Stanley. The largest of the fragments became impacted in the spongy portion of the urethra some days after the operation of crushing, and was removed by operation.

130. Sections of a Calculus. Central portion, Oxalate of Lime with a little Uric Acid; around it, Oxalate of Lime; imperfectly coated by the Phosphates of Ammonia and Magnesia.

Lithotomy by W. Hill, Esq.

131. Calculus. Oxalate of Lime.

From the bladder of a boy thirteen years old. Lithotomy by Mr. Lawrence.

132. Calculi broken into several portions, which were found after death in the bladder of an old man. They had broken spontaneously, and appear to have been parts of several large calculi; the edges of many of the fragments are rounded by mutual friction. They consist of Uric Acid, with a few layers of Urate of Ammonia.

The patient was eighty-one years old, and had suffered for more than a year with signs of stone in the bladder. He would not allow an instrument to be passed, but on two occasions in the nine months previous to his death, he obtained great relief from the use of alkaline medicines. Case-Book, Vol. i. p. 97, No. 132.

Presented by J. F. Harding, Esq.

133. Fragments of a Calculus. Impure Uric Acid.

From the bladder of a man sixty years old. Lithotripsy by Mr. Stanley.

134. Fragments of a Calculus. Chiefly Uric Acid.

From the bladder of a man forty-five years old. Lithotomy by Mr. Lawrence.

135. Sections of a Calculus. Urate of Ammonia surrounded by Oxalate of Lime, and coated with Fusible Calculus, which forms at one part a thick mass.

From the bladder of a child six years old. Lithotomy by Mr. Lawrence.

136. *Caleuli.* Urate of Ammonia and Oxalate of Lime in alternate layers.

From the bladder of a boy ten years old. Lithotomy by Mr. Stanley. The smaller portion was found loose in the bladder, and from the smoothness of its surface, it may be presumed to have been spontaneously separated a considerable time before the operation, from that part of the larger calculus on which an excavation is now visible.

137. *Calculus.* Oxalate of Lime. Crystals of pure white Oxalate of Lime deposited on brown tuberculated Oxalate of Lime.

Passed from the bladder of an old man.

Presented by John Goldsmith, Esq.

138. Fragments of *Caleuli*, chiefly impure Uric Acid. They were passed from the bladder of an old man, and appear to be portions of one or more *caleuli* broken up spontaneously.

Presented by John Goss, Esq.

139. Sections of a *Calculus.* Urate of Ammonia.

From the bladder of a boy. Lithotomy by Mr. Stanley.

140. Fragments of *Calculus.* Impure Uric Acid.

From the bladder of a man fifty-six years old. Lithotripsy by Mr. Stanley.

141. *Caleuli.* Nearly pure Uric Acid.

From the bladder of an elderly man, which is preserved in Series XXVII., No. 30. The small portions at the lower part of the bottle were broken off in an operation of lithotripsy by Mr. Stanley. The larger calculus, which has been divided vertically, lay in a deep recess of the bladder behind the prostate, and was not detected by the instruments.

142. Twenty-four *Calculi* removed after death from the bladder of an old man, in whom the signs of calculus had existed for twelve months. He died with extensive ulceration of the mucous membrane of the bladder.

143. *Calculeous Matter*, consisting chiefly of the Phosphates, removed after death from the bladder of a man aged thirty-nine.

The patient, a sailor, had retention, followed by effusion, of urine four years before death. Fistulous openings in the perineum remained, and signs of the existence of calculus ensued about a year before death. Case-Book, Vol. i. p. 141, No. 165.

Presented by H. Snowden, Esq.

144. Calculus passed from the bladder of a man twenty-seven years old.
145. Calculi removed after death from a boy eight years old. The larger calculus was situated in the right ureter near the bladder: the smaller portions were situated in the pelvis and infundibula of the right kidney.
Lithotomy had been performed a fortnight before death. The kidneys were both very much dilated, and their pelvis and calyces were filled with pus.
146. Three small Calculi passed from the kidney.
147. Two Calculi and the halves of three others. Compact Uric Acid, surrounded by loosely cohering and cracked Uric Acid. External layer, Phosphate of Ammonia and Magnesia, with a small quantity of Phosphate of Lime.
From the bladder of a man on whom the operation of lithotomy had been performed several years before death. There were eleven calculi of the same kind.
Presented by Thomas Wormald, Esq.
148. Sections of a mulberry-like Calculus. Oxalate of Lime: the nucleus probably contains Urate of Ammonia.
From the bladder of a boy eleven years old. Lithotomy by Mr. Stanley.
149. Sections of a Calculus. Urate of Ammonia with Urate and Oxalate of Lime; around this crystallized Oxalate of Lime: the whole coated by a mixture of Phosphate and Carbonate of Lime with traces of Uric Acid.
From the bladder of a boy ten years old. Lithotomy by Mr. Stanley.
150. Sections of a Calculus. Nucleus, impure Uric Acid; exterior, the mixed Phosphates.
From the bladder of a man twenty-one years old, who had suffered with symptoms of stone from childhood. Lithotomy by Mr. Lawrence.
151. Sections of a Calculus. Oxalate of Lime, surrounded by Uric Acid.
From the bladder of a boy eight years old. Lithotomy by Mr. Wormald.
152. Calculus. Urate of Ammonia.
From the bladder of a boy three years old. Lithotomy by Mr. Stanley.

153. Fragments of a Calculus. Impure Uric Acid.

From the bladder of a man sixty years old. Lithotripsy by Mr. Stanley.

154. Fragments of Calculus. Phosphate of Ammonia and Magnesia with Phosphate of Lime; and small quantities of Carbonate of Lime and Urate of Ammonia. It contains small particles of a bright red colour, the nature of which is uncertain.

From the bladder of a man thirty years old. Lithotomy by Mr. Stanley.

155. Sections of a Calculus from the bladder of a child. Nucleus, Urate of Ammonia; surrounded by the Phosphates.

Lithotomy by Mr. Stanley.

156. Calculi removed from the bladder and urethra of an elderly gentleman. The upper calculus filled the membranous and bulbous portion of the urethra; the lower, which has been divided, was in the bladder. The external crust of the stone from the bladder consists principally of the Phosphates, (especially Phosphate of Lime and some Carbonate of Lime) and animal matter. The stone from the urethra consists of the same materials with a larger proportion of the Carbonate of Lime, and some Oxalate of Lime. Analysis by Dr. Prout.

157. A small bright yellow granulated Calculus, of Uric Acid.

Removed after death from the kidney of a man about forty years old, who died with an enlarged spleen, and shortly before death had passed a large quantity of Uric Acid with his urine.

158. Twenty-eight entire small Calculi, and parts of four or five others, from the bladder of a gentleman sixty-eight years old, who had slight enlargement of the prostate gland. Their surfaces are smooth and flat. Uric Acid.

Lithotomy by Mr. Lawrence.

159. Five large portions of Calculus passed through the urethra. Compact Uric Acid.

Lithotripsy by Mr. Vincent.

160. Several Calculi, composed chiefly of Oxalate of Lime, which were removed after death from the bladder of an old man.

They are irregular in form and rough on their surfaces; the largest of them is three quarters of an inch in diameter.

161. Part of 146 Calculi, removed from a sac connected with the middle of the spongy portion of the urethra. It was not certain whether the sac was formed by the urethra dilated behind a stricture which existed immediately in front of it; or was formed after ulceration of the urethra in the tissues around it. Fusible calculus with thin layers of Urate of Ammonia intermixed.

Operation by Mr. Viuent.

The patient was a man twenty-three years old. He had been for ten years subject to incontinence of urine, the consequence of a kick, by which the urethra was ruptured or otherwise injured. He was in the habit of wearing a yoke to compress the anterior part of the urethra. Six years before the removal of the calculi, he had bleeding from the urethra for several days, and then first perceived the swelling in the perineum, which from that time gradually increased with the increase of the calculi. Case-Book, Vol. i. No. 222. The rest of the calculi are in the Museum of the Royal College of Surgeons of England.

162. Calculus. Nearly pure Oxalate of Lime, in perfect crystals on the external surface.

From the bladder of a boy two years and a half old. Lithotomy by Mr. Lawrence.

163. Sections of a large Calculus. Nucleus, Oxalate of Lime; surrounded by thick alternate layers of Uric Acid and Oxalate of Lime; and coated by a thick layer of Phosphate of Ammonia and Magnesia.

Presented by E. A. Lloyd, Esq.

164. Sections of a large Calculus, of pure, compact, and tuberculated Uric Acid.

From a man between thirty and forty years old. Lithotomy by Mr. Lawrence.

165. Section of a large Calculus. Uric Acid.

Lithotomy by Percivall Pott.

Presented by the Council of the Royal College of Surgeons of England.

166. Sections of a Calculus. Nucleus, Oxalate of Lime; outer white layer, the Phosphates.

From a young man. Lithotomy by Mr. Lawrence.

167. Sections of a large laminated Calculus. Uric Acid.

Presented by the Council of the Royal College of Surgeons of England.

168. Renal Calculi. Uric Acid with small portions of Oxalate of Lime.

Presented by E. A. Lloyd, Esq.

169. Section of a Calculus. Principally Uric Acid.

170. Section of a Calculus. Uric Acid.

171. Section of a Calculus. Oxalate of Lime ; the exterior, the same crystallized.

172. Section of a Calculus. Impure Uric Acid.

173. Section of a Calculus. Urate of Ammonia surrounded by the mixed Phosphates.

174. A mass of Calculous matter, consisting of the mixed Phosphates, deposited on a portion of a bougie.

The six preceding specimens were presented by the Council of the Royal College of Surgeons of England.

175. Calculus. Nucleus, Uric Acid ; surrounded by a layer of Uric Acid, Urate of Ammonia, and earthy Phosphates ; external layer, triple Phosphates.

From a boy. Lithotomy by Mr. Stanley.

176. Calculus. Phosphates, coating, probably, a Calculus of Uric Acid.

From a child two years and ten months old, who died after lithotomy, with hemorrhage from one kidney and suppuration in the other.

Presented by E. A. Lloyd, Esq.

177. Sections of a Calculus. Nucleus, Urate of Ammonia with Oxalate of Lime ; surrounded by a mixture of the same with the Phosphates.

From a boy three years and a half old. Lithotomy by Mr. Stanley.

178. Section of a Calculus. Uric Acid ; surrounded by Urate of Ammonia, which is probably mixed with Urate of Lime.

179. Sections of a Calculus. Impure Urate of Ammonia, surrounded by a layer of the Phosphates.

180. Section of a Calculus. Oxalate of Lime in layers of various structure.
181. Section of a Calculus. Mixed Phosphates with thin layers of Urate of Ammonia.
The four preceding specimens were presented by the Council of the Royal College of Surgeons of England.
182. Small Calculus passed from the kidney. Oxalate of Lime with Crystals.
183. Calculus from the pelvis of the kidney of a child five months old. Uric Acid with Urate of Ammonia.
The other kidney, with a similar calculus, is in Series XXVI. No. 28.
Presented by Dr. West.
184. Section of a very large Calculus from the bladder of a horse. Principally Carbonate of Lime. It has a very compact, hard texture, like a piece of Bath stone.
Presented by F. Salmon, Esq.
185. Calculi from the bladder of a dog. Internal part, Phosphate of Lime; external part, Phosphate of Lime and triple Phosphate.
186. A small Calculus from the bladder of a rat.
187. Section of a Calculus passed from the bladder of a mare. Phosphate of Ammonia and Magnesia, with a small quantity of Phosphate of Lime.
Presented by Thomas Wormald, Esq.
188. Section of a large lobed Calculus, removed after death from the bladder of a horse. Oxalate of Lime.
Presented by Thomas Jones, Esq.
189. Section of a large Calculus voided from the bladder of a mare five years old.
Presented by the Council of the Royal College of Surgeons of England.

SERIES XXXVII.

UNORGANIZED CONCRETIONS FORMED IN THE DIGESTIVE ORGANS; INCLUDING SALIVARY, BILIARY, AND INTESTINAL CALCULI.

Salivary Calculi, 25 to 28, 46.

Biliary „ 1 to 19, 21, 37.

Pancreatic „ 20.

Intestinal „ 22, 23, 24, 29 to 36, 38 to 45.

1. SECTIONS of a large Calculus from the gall bladder. Its fractured surface presents a brilliant crystallized appearance.
2. Calculi from the gall bladder. Composed principally of Cholesterine, the ashes containing a small quantity of Phosphate of Lime.
3. Sections of a large Cholesterine Calculus from the gall bladder.
4. Fifteen hundred small round Calculi from a gall bladder. Cholesterine.
5. Calculi from the gall bladder.
6. Calculus from the gall bladder, probably nearly pure Cholesterine.

7. Calculi from the gall bladder.
8. Numerous small black Calculi, consisting, probably, of inspissated bile, from the gall bladder.
9. Calculi from the gall bladder. They present flattened surfaces, by which they were mutually adapted.
10. Calculi from the gall bladder.
11. Calculi from the gall bladder. Composed of Cholesterine, with a small proportion of Phosphate of Lime.
12. Five Calculi from the gall bladder, in which they lay in a row with their adjacent surfaces flattened and adapted to each other.
13. Numerous small Cholesterine Calculi from the gall bladder.
14. Twelve Biliary Calculi of various sizes, extracted from an abscess at the umbilicus.
15. Calculi from the gall bladder.
16. Minute dark Calculi from the gall bladder.
17. Calculus, probably from the gall bladder.

It was voided, per anum, by a woman after a severe attack of intestinal inflammation, from which she completely recovered.
Presented by W. Hill, Esq.
18. Five large Biliary Calculi, which were mutually adapted by flat and slightly curved surfaces, and exactly filled the gall bladder.
19. A collection of small, soft, brownish-yellow Calculi, from the gall bladder of a man who died with aneurism of the aorta.
20. Twelve small round Calculi from a pancreas.
21. A small oval Calculus, consisting, apparently, of Cholesterine, from a cyst in the liver.

22. A quantity of earthy matter in fine grains, like sand, discharged from a rectum.

23. A Brass Pin, round the head of which is a disk-shaped mass of calculous matter, more than half an inch in diameter.

It was taken from the appendix of the cæcum of a man.

24. A mass of similar calculous matter deposited round a pin.

It was discharged from the rectum of a man, after great suffering.

Presented by Thomas Ilott, Esq.

25. Two small Calculi from a parotid duct.

26. Three Calculi, which were removed from the sub-maxillary duct.

Presented by Thomas Ilott, Esq.

27. A minute Calculus, from the sub-maxillary duct of a child.

Presented by H. Hunt, Esq.

28. A Calculus from the sub-maxillary duct of an old man: the grandfather of the child from whom the preceding specimen was taken.

Presented by H. Hunt, Esq.

29. Section of a large Concretion from the human intestines. It is chiefly composed of fibres of oatmeal collected in a compact mass around a plum-stone. It caused death by the obstruction of the intestinal canal.

Presented by the Council of the Royal College of Surgeons of England.

30. Section of a Calculus from the intestine of a horse. It is composed of Phosphates with much animal matter. Its nucleus is a brass pin.

31. A large Calculus, of a cubic form, from the intestine of a horse. Composition, the Phosphates, with much animal matter; fusible.

32. Section of a Calculus of similar composition, from the intestine of a horse. Its nucleus is a piece of iron.
33. Section of a large, thin, disk-shaped Calculus, of similar composition, from the intestine of a horse.
34. A similar specimen, but of pyramidal form.
35. A similar specimen, of polyhedral form.
36. A specimen exactly similar to No. 35.
37. Small Calculi from the hepatic duct of a horse.
38. A large and very rough-surfaced Calculus, from the intestines of a horse. In its centre is a piece of flint, around which a quantity of hair is imbedded in it.
Presented by Thomas Ilott, Esq.
39. A spherical Calculus, which was removed after death from the intestines of a horse.
Presented by M. P. Lucas, Esq. President of the Hospital.
40. Portion of a Bezoar from the intestines of some East Indian animal.
41. Section of a Bezoar, composed chiefly of Pinic Acid. Its nucleus is a date stone. It was probably from the intestines of one of the larger species of East Indian deer.
42. Section of a Bezoar from a rhinoceros.
43. Section of a Bezoar from an elephant.
44. Section of a Calculus from the intestines of a horse. It is composed of Diphosphate of Lime in concentric layers.
45. Section of a Hair-Ball, coated by earthy matter, from the stomach of a goat.

The six preceding specimens were presented by the Council of the Royal College of Surgeons of England.

46. A very large Calculus removed from a woman's submaxillary duct. A portion of it was crushed in the extraction. When entire it measured an inch and a half in length, and a third of an inch in diameter. Its composition is Bone-Phosphate of Lime with animal matter, and a trace of Carbonate of Lime.
47. Section of a very large spherical Calculus from the intestines of a horse.
48. A similar specimen.
49. A large polyhedral Calculus from the intestines of a horse.
From the collection of Dr. Jenner.
50. An oval Hair-ball from an ox.
51. A spherical Hair-ball with a very smooth, hard surface, from a cow.
52. A similar specimen.
53. A numerous collection of small Calculi, from the intestines of a horse.

The seven preceding specimens were presented by the Council of the Royal College of Surgeons of England.

SERIES XXXVIII.

UNORGANIZED CONCRETIONS, FROM THE CIRCULATORY AND OTHER ORGANS.

1. TWELVE small round Calculi from a Spleen; formed probably in its veins.
2. Small portions of earthy matter discharged by coughing.
3. A Collection of Phebolithes, or Calculi from Veins. Most of them are spherical; some are oval; they vary from half a line to half an inch in diameter; and some are laminated. They consist chiefly of Phosphate of Lime.
4. Part of a Gouty Concretion, from the first joint of a Great Toe.
5. A small hard and compact laminated Concretion from a Lung. It consists chiefly of Carbonate of Lime.

There were no tubercles in any stage of progress in the patient's lungs.

APPENDIX,

CONTAINING DESCRIPTIONS OF SPECIMENS RECEIVED, OR OVER-LOOKED, DURING THE PRINTING OF THE CATALOGUE.

1. SECTION of a small growth of Skin and Fat, attached by a long pedicle to the skin of the axilla.
2. A Molar Tooth, the crown of which is nearly destroyed by decay, while to the extremity of its fangs is attached the cyst of an abscess, more than half an inch in diameter.
It was extracted from a boy fourteen years old, in whom it had caused extreme pain for seven days.
3. A small Polypous Growth, suspended from the mucous membrane of the stomach. Its surface is darkened by granules of black deposit.
4. A Tongue, in which the anterior three-fourths of the upper part are occupied by a circular ulcer, two inches in diameter, with a broken, soft, and shreddy surface. Beneath the ulcer is a layer half an inch thick, in which the substance of the tongue is occupied by a soft and loosely filamentous substance, infiltrated with thin creamy fluid. The margin of the ulcer is nearly surrounded by a hard layer of opaque-white epithelium, which is, in parts, a line in thickness. Around this layer the tongue appears healthy.

The patient was a man sixty-eight years old. The disease commenced eight years before death, in a small hard white lump on the middle of the dorsum of the tongue, on a spot on which the end of a tobacco-pipe had often rested. The

patient was for several years in the habit of paring this lump with a razor twice a week. It enlarged and extended over all that part of the tongue now occupied by the ulcer, but gave him no inconvenience except from its hardness and the enlargement of the tongue. About four months before death ulceration commenced, and extended over nearly all that part of the tongue which had been covered by the thickened epithelium. The tongue at the same time became very large, completely preventing natural deglutition; and the patient died exhausted.

The whole of the morbid substance is composed of large nucleated cells or scales like those of tessellated epithelium, with small quantities of filamentous tissue and bloodvessels.

Presented by William Taylor, Esq.

5. The upper part of a Femur, in which an oblique fracture about an inch below the lesser trochanter, has united with an angular deformity; the superior portion lying behind and across the inferior one. In the upper portion, in the place of the natural structure of the walls of the femur, there is only a fine network of bony plates and fibres; and the osseous part of the medullary portion is formed of fine spongy and porous bone. The same change has taken place, in a less degree, in the lower portion. The diseased portions of bone, as well as the bond of union of the fracture, were filled, as if infiltrated, with tough, grey, cancerous matter.

The patient was a woman forty-seven years old. Two years before death her breast was removed on account of hard cancer. Sixteen months afterwards, when the disease in the breast had returned and ulcerated, in stepping from a cabriolet, she fractured her femur. The fracture was united in six weeks, but she did not regain the use of the limb. She died eight months after the fracture with extension of the cancerous disease of the breast.

Presented by H. G. Grayling, Esq.

6. *Plica Polonica*; a large quantity of hair matted, with the secretions of the scalp, into a thick hard mass.

Removed from the head of a native of Wilna in Lithuania.

Presented by W. S. Ward, Esq.

7. A Cord formed of human hair. It measures four feet and a half in length, and about half an inch in diameter, and, except at its extremities, is nearly cylindrical. The hair in it is irregularly but closely and very firmly matted.

It was removed after death from a woman sixty years old, who became a widow when young, and allowed this part of her hair to grow, as a "widow's lock," till she died, in 1722.

Presented by Herbert Evans, Esq.

8. The Feet of a girl, which mortified and sloughed off after exposure to cold.

The patient, nineteen years old, slept in the street during a cold night. In the morning her feet were found frost-bitten, and were put in warm water. No operation except the sawing through the bones was necessary for their removal.

9. The Trunk of a man with the large bloodvessels injected. The aorta has been nearly obliterated between the left subclavian artery and the ductus arteriosus, and completely obliterated opposite the first lumbar vertebra. The portion of the trunk between the obliterated parts, and that below the inferior obliteration, are small; but the iliac arteries are of the natural size. All the intercostal arteries, especially the three superior on each side, are very large and tortuous; as are also the branches of the posterior scapular, and inferior thoracic, the descending branches of the subscapular arteries, and the posterior mediastinal arteries. The brachio-cephalic trunks are of natural size.

Presented by F. C. Skey, Esq.

10. A small oval Cyst, with a wrinkled, but polished, lining membrane, and exhibiting two valves, like those of a vein, attached to its wall. On one of these valves is a small soft lobulated growth. The walls of the cyst are thin, and loosely attached to the skin and other adjacent parts.

The cyst was full of blood, and was removed from the thigh of an elderly woman, in whom it occupied the position of the upper part of the internal saphenous vein. It appears to have been formed by a portion of the vein remaining open between two points in which its canal had been obliterated. No portion of a bloodvessel could be traced opening into the cyst.

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